AFIT/GLM/LSM/92S-3

DESERT EXPRESS: FRAMEWORK FOR INSTITUTIONALIZATION OF EXPRESS AIRLIFT PROCEDURES

THESIS

Terry D. Basham, Captain, USA
Jason G. Evgenides, Captain, USAF

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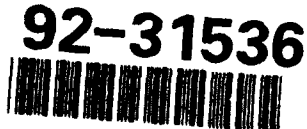

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THESIS

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of the Air Force Institute of Technology
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Terry D. Basham, B.S.
Captain, USA

Jason G. Evgenides, B.S.
Captain, USAF

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Terry D. Basham Jason G. Evgenides

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Abstract

This study was sponsored by the Military Airlift Command to examine the Desert Express airlift channel used during Operation Desert Shield/Desert Storm. The goal was to determine what changes or improvements should be made prior to formalizing Desert Express procedures into Department of Defense doctrine.

The research method used was a Literature Review supported by an application of the Delphi Technique. The Literature Review reviewed past military express operations and current regulatory procedures to raise key issues. These issues were then presented to 19 airlift experts in two separate rounds of written questionnaires.

The research revealed that Desert Express was the latest example of a repeating trend in which a similar problem was solved using similar procedures used in past contingencies. The problem was aerial port backlogs caused by a shortfall of airlift assets, a lack of a pre-existing plan, and a lack of movement control. Solutions were express airlifts and tighter movement control.

The research found that while successful, Desert Express suffered from operation control problems. Suggested improvements included the establishment of a stronger Supported Command Joint Transportation Board and clearer lines of responsibilities between key participants.

DESERT EXPRESS: FRAMEWORK FOR INSTITUTIONALIZATION OF EXPRESS AIRLIFT PROCEDURES

I. Introduction

Problem Background

In all United States military contingency operations since the inception of airlift, there has been some type of "express" airlift to move high priority cargo to the theater of operation. In all cases, the need for an express airlift channel arose due to the backlog of high priority cargo at the aerial ports of embarkation. The purpose of each express channel was to allow high priority cargo to bypass these backlogs.

Specific examples of aerial port backlogs were experienced during Korea and Vietnam. During the Korean Conflict:

> Understandably, the Air Force was anxious to airlift supplies to Korea as fast as possible, but in the haste of the first months there were too many high priority requests, resulting in confusion and an excessive backlog. (Carlin and others, 1981:12)

Similar circumstances arose during the conflict in Vietnam.

> Lack of it [movement control] during early Vietnam years caused port congestion at both ends of the transportation system, resulting in delayed receipt of critical material by combat organizations (Stubbs, 1983:2),

and;

> Because of substantial congestion at West Coast aerial ports, the Military Airlift Command [MAC] established inland ports to meet the need for rapid cargo delivery. (Allen, 1989:154)

The use of express airlift to solve backlog problems occurred during World War II, the Korean Conflict, and Vietnam. During World War II in the Burma-India Theater:

> Support of air operations was virtually impossible with such extended supply lines, so for high priority items, such as R-3350 engines for the B-29, Air Transportation Command flew a ferry service direct from the United States. Pilots would change at every stop, but the plane would continue on to the final destination. By 1944, using the air route, planes could deliver parts from stateside to Calcutta in under 70 hours, an air distance of some 11,000 miles. (Coakley and Leighton as cited by Allen, 1989:98)

In response to the Vietnam backlog:

> To make sure that truly high-priority items moved quickly, the Red Ball Express system, which was aimed especially at Army vehicles, aircraft parts, and aircraft, came into being in 1965. MAC guaranteed movement within 24 hours of receipt in an APOE. A year later similar procedures were applied (with the 999 program) to all services. (Miller, 1988:329)

The latest example, "Desert Express," was created during Operation Desert Shield for many of the same reasons found in the earlier contingencies. Its mission was to insure that high priority coded cargo would not get bogged down in normal channels.

General Issue

Despite historic evidence of a need, no specific contingency express airlift procedures existed in either regulatory guidance or operation plans prior to Operation Desert Shield.

Department of the Air Force Regulation 76-38, titled *Airlift Operations* does provide Air Force policy for establishing additional airlift channels to meet requirements. Joint Chiefs of Staff Publication (JCS Pub) 4-04 contains generic flow charts of how to meet unplanned resupply requirement during contingencies. Department of Defense (DOD) regulatory guidance contained in the Military Standard Transportation and Movement Procedures (MILSTAMP), and service regulations provide guidance on using these airlift channels. In this light, policies for express or special support channels did exist in numerous different sources.

What made Desert Express different from existing procedures, was its door to door express approach, its reliance on the commercial overnight concept of small package only shipments, and its use of commercial air feeder service. Also, in earlier contingencies, express air operations were limited to the period MAC (or its predecessors) held the cargo as noted in cited examples for World War II, Korea, and Vietnam.

The United States Transportation Command (USTRANSCOM) foresaw the impending backlog problem as early as August 1990 and planning for Desert Express began in early October. As a result, on 12 October 1990, the Commander, USTRANSCOM proposed a premium transportation system to move the highest priority parts to Saudi Arabia (USCINCTRANS/TCJ3-J4 msg, 121835Z, 12 October 1990).

Although USTRANSCOM created and operated Desert Express, numerous military commands and agencies, both under and outside the USTRANSCOM umbrella, played major roles in the planning, creation, and operation of Desert Express. Procedures for the operation were developed for or by each participant as the need arose.

Problem Statement

The military has repeatedly identified a need for an express transportation system during contingency operations and war. In each situation, procedures were developed to meet the need. The success of Desert Express led General Hansford Johnson, USAF, Commander in Chief of both USTRANSCOM and the Military Airlift Command to state, "We need to institutionalize this process so we don't have to reinvent the wheel every time we have a Desert Storm" (CINCMAC/CV note, 15 August 1991).

Research Objective

Key to General Johnson's requirement for institutionalization is that the "we" in his statement includes the myriad of players, in and out of USTRANSCOM, who play key roles in air shipment of cargo. Each of these have a part to play in identifying the good and bad aspects of express airlift, suggesting improvements, and then formalizing the solutions across the DOD and within their respective organizations. Reaching a consensus in identifying institutional changes is crucial to gaining

broad acceptance of the solution. Also, it is important determining if the need expressed by General Johnson is generally accepted.

This research was initiated as a follow on to Major Thomas C. Thalheim's 1991 Thesis titled *DESERT EXPRESS: AN ANALYSIS ON IMPROVED CUSTOMER SERVICE*. Major Thalheim's conclusion agreed with General Johnson's statement above; however, his thesis did not make specific recommendations. This research continues where Major Thalheim stopped by addressing the following Research Objective: What improvements should be made to express airlift systems based on lessons learned from past conflicts and Operation Desert Shield/Desert Storm.

Investigative Questions

To fulfill the research objective, the following investigative questions were addressed:

1. What organizations were involved and what were their Desert Express roles?

2. What are the critical Desert Express lessons learned?

3. What changes have already been made or suggested as a result of Desert Express?

4. What improvements to the Desert Express system should be made before it is formalized?

5. Where should Desert Express procedures be formalized?

Scope and Limitations

The focus of this research is to supply USTRANSCOM and other policy makers a list of recommended actions for improving express airlift operations prior to formalization of governing directives. This will allow USTRANSCOM to address implementation of recommended actions with these organizations.

The research polled transportation experts to gain a consensus on recommended actions. The experts represented the population of planners, operators, regulators, and users associated with the movement of high priority cargo on Desert Express during Desert Shield/Desert Storm. To insure objectivity on the central issue, experts were limited to personnel involved in the planning, creation, and operation of Desert Express.

This research is limited to resupply and sustainment airlift operations. Unit deployment movements are not addressed. Additionally, this research will not:

1. Address solutions to real or perceived abuses of the supply requisition and transportation prioritization process.

2. Address solutions to real or perceived problems with the Joint Operation Planning and Execution System (JOPES).

3. Suggest line by line regulatory changes.

4. Address European Express or intra-theater Star or Camel Express operations.

The Secretary of Defense has already addressed the supply requisition and transportation system in his February 14, 1992 Memo Subject: Strengthening Department of Defense Transportation Functions. In it, the Secretary directs the Chairman of the Joint Chiefs of Staff to "...submit to me [SECDEF] for approval any changes to the transportation movement priority system necessary to ensure its responsiveness to the commanders of the unified or specified commands and other DOD components requiring transportation services" (Secretary of Defense Memorandum, 1992:2).

Line by line changes to existing publications are inappropriate due to the ongoing revision of the Joint Chiefs of Staff 4-Series (logistics) Joint Publications. Military Service and combatant publications will be affected by both of the above actions.

Terminology

This thesis uses Air Force organizations as they existed at the start of the research. Therefore, Military Airlift Command (MAC) and Air Force Logistics Command (AFLC) are used throughout this document versus the new Air Mobility Command (AMC) and Air Force Material Command (AFMC) designations. The procedural changes are readily identified to the new organization by the reader.

Definitions

1. Pipeline: In logistics, the channel of support of a specific portion thereof by means of which material or personnel flow from sources or

procurement to their point of use. (Joint Pub 1-02, 1989:278)

2. Channel Airlift: Common-user airlift service provided on a scheduled basis between two points. (Joint Pub 1-02, 1989:64)

3. Contingency: An emergency involving military forces caused by natural disasters, terrorists, subversives, or by required military operations. Due to the uncertainty of the situation, contingencies require plans, rapid response and special procedures to ensure the safety and readiness of personnel,installations and equipment. (Joint Pub 1-02, 1989:86)

4. Contingency Plan: A plan for major contingencies which can be reasonably be anticipated in the principle geographic subareas or the command. (Joint Pub 1-02, 1989:86)

5. Unified Command: A command that has a broad continuing mission under a single commander and composed of significant assigned components of two or more Services, and which is established and so designated by the President, through the Secretary of Defense with the advice and assistance of the Joint Chiefs of Staff, or, when so authorized by the Joint Chiefs of Staff, by a commander of an existing unified command established by the President. (Joint Pub 1-02, 1989:384)

6. Specified Command: A command that has a broad continuing mission and that is established and so designated by the President, through the Secretary of Defense with the advice and assistance of the Joint Chiefs of Staff. It is normally composed of forces from but one Service. (Joint Pub 1-02, 1989:340)

7. Component Command: The Service command, its commander, and all its individuals, units, detachments, organizations, or installations that have been assigned to the unified command. (Joint Pub 1-02, 1989:330)

Conclusion

Express airlift plays an important role in the sustainment of personnel and equipment during contingencies

by responding to the needs of the geographical Commander in Chief (CINC). In past cases, this response has been reactive in some cases and proactive in others. Lieutenant Colonel Charles E. Miller, author of *Airlift Doctrine*, wrote in 1988 that

> ...airlift will always be a scarce resource. Within a theater this means that a fast, responsive system for requesting airlift, evaluating airlift requests, prioritizing airlift allocations, and executing airlift missions must be planned for, in existence, and well trained before a conflict. (Miller, 1988:433)

Research objectives and investigative questions were developed to examine; what operational parts of Desert Express need to be improved prior to institutionalization.

In Chapter II, a review of literature provides insight into past express operations by discussing their causes and lessons learned. The review also identifies the key participants, reveals current procedures, and discusses lessons learned from Desert Express.

Chapter III defines the Delphi methodology which provided "experts" the opportunity to furnish data required to improve the military airlift express system. The tabulation of Delphi responses and steps taken if a consensus cannot be reached are also explained.

Chapter IV evaluates the results of the information presented in Chapter II, the Literature Review, and the results of the Delphi Surveys process which are reproduced in Appendices A through E. The findings provide answers to the five investigative questions.

Chapter V summarizes the investigative results to answer the research objective. Contribution of this research and recommendations for future research are also presented.

II. Literature Review

Introduction

Purpose. Military leaders hail the success of Desert Express. Still, different opinions exist as to how, or if, the lessons learned from this operation should be formalized into DOD doctrine and/or regulation. These differing opinions form the justification and scope for the literature review.

The purpose of this review is threefold: first, to establish the importance of transportation; second, to establish the historical need for express transportation, and, third, to establish the continuing need for express transportation, specifically, airlift. The survey concentrated on five major areas: past problems; past solutions; creation and operation of Desert Express; Desert Express key players; and different views on Desert Express lessons learned and their relevance to future operations.

Publications Reviewed. Desert Express holds a unique place in airlift history. Research to incorporate its lessons into Department of Defense (DOD) regulations began with a survey of relevant literature. Information was gleaned from a multitude of sources. At DOD level, the literature reviewed included: the 1970 Joint Logistics Review Board Report *Logistic Support in the Vietnam Era*; the 29 March 1988 *Joint Material Apportionment and Allocation Study*; the July 1991 *Conduct of the Persian Gulf Conflict*,

An Interim Report to Congress; DOD Regulations 4410.6 Uniform Material Movement and Issue Priority System (UMMIPS) and *4500.32R Military Standard Transportation and Movement Procedures (Milstamp); DOD Directive 5100.1 Functions of the Department of Defense and Its Major Components; Joint Pub 4-0 Doctrine for Logistic Support of Joint Operations (Proposed Final); Joint Pub 4-04 Mobility Systems Policies, Procedures and Considerations (Change 1);* and a Secretary of Defense Memorandum dated 14 February 1992, Subject: "Strengthening Department of Defense Transportation Functions." These sources provided insight into current DOD transportation systems, policies and procedures. They also identified some of the lessons learned and proposed changes in the wake of Operation Desert Shield/Desert Storm.

Service level literature included: *Army Regulation 725-50 Requisitioning, Receipt, and Issue System; Air Force Regulations 76-38 Airlift Operations*, and *75-1 Traffic Management: Transportation of Material;* an August 1991 Air Force White Paper entitled "USAF Transportation 1995 Focus/Direction." Also cited were Service supported books and magazines such as, the *Air Force Journal of Logistics, The Logistics of Waging War, Airlift Doctrine, Military Review,* and *Soldier*. These sources outlined current regulatory procedures, and provided comments and lessons learned from those involved in Operation Desert Shield/Desert Storm and similar operations of the past.

Other sources of information included a wide selection of the message traffic which flowed between numerous DOD agencies during Operation Desert Shield/Desert Storm; the *USTRANSCOM History Volume I, Desert Shield/Desert Storm 7 August 1990 - 10 March 1991*; and numerous intra-agency Point Papers, civilian magazines, and two Government Accounting Office (GAO) reports.

The message traffic primarily focused on the creation and operation of Desert Express. The other sources covered a wide variety of Operation Desert Shield/Desert Storm supply or transportation topics.

Past Problems and Solutions

American military history is full of past supply-transportation pipeline failures, successes, and lessons learned. The 1989 Air Force Logistics Management Center book, *The Logistics of Waging War*, provides a wealth of information on every American conflict from a logistical point of view. Unfortunately, the book points out that many of the failures have been repeated over and over again. Repeated failures require re-inventing the same solution again and again.

This is the case with transportation in general and airlift in particular. Past transportation problems generally resulted from shortfalls in transportation assets, planning, or movement control. The following sections on problems and solutions identify specific instances where

failures occurred and the solutions used to solve the problems. Both sections follow the outline: constrained assets; lack of planning; and lack of movement control.

Past Problems

Constrained Assets. Constrained transportation resources repeatedly created problems before and after the age of airlift. During the Revolutionary War:

> ...although obtaining supplies was always a problem, the lack of transportation intensified the problem. When Washington's Army was forced to retreat from New York City in 1776, numerous supplies had to be left behind for want of transport. (Allen, 1989:20)

Later, during World War II,

> The ultimate cause of the backlogs was, indeed, a shortage of airplanes and could only right itself slowly with the eventual delivery of airplanes on order. (Miller, 1988:39)

Again, in Korea, "...the airlift system lacked the capacity to move anything but the highest priority cargo" (Johnson, 1991:24).

After the Vietnam Conflict, a Joint Logistics Review Board (JLRB) noted that:

> The Military Air Transport Service, later the Military Airlift Command, entered this era without an adequate long-range jet cargo transport aircraft. The airlift system was at times saturated during the buildup period, and substantial quantities of air cargo were diverted to surface transportation. (JLRB, 1970:10)

Lack of Planning. The lack of prior planning has also contributed to transportation problems. General Johnson reported during a Senate Armed Forces Subcommittee hearing that "the root of transportation difficulties during the

Spanish-American War was a lack of precise planning" (Johnson, 1991:21).

After Vietnam, the JLRB also reported that "...the operational plans for SE Asia were not precisely relatable to the situation as it actually developed" (JLRB, 1970:5). Major Gregory Stubbs wrote that "In other words, force deployment decisions were ad hoc rather than controlled by a master plan" (Stubbs, 1983:3).

Lack of Movement Control. Airlift was never intended to carry everything. In fact, General William H. Turner, the officer responsible for the Burma Hump and Berlin Airlift operations wrote that

> It should be constantly borne in mind that the primary use of air transport should be to airlift critical, scarce, and expensive items routinely..." (Turner, 1985:235)

To accomplish this goal, movement control procedures have long been established to assign a priority to each military shipment.

> Movement control involves regulation of material flow based on total transportation capability and priority of multi-service need. Contingency situations almost always demand movement control, since, when requirements exceed transportation capability, decisions must be made about what goes first. (Stubbs, 1983:2)

Only those shipments with the highest priority were eligible for airlift. Unfortunately, the system often could not be policed. Lack of movement control, led to the saturation of airlift channels. During the Korean War,

> ...within three weeks after the start of the conflict, it became obvious that many of the lessons learned

> during World War II had been forgotten. More than one-half the initial requisitions were listed top priority. Since this priority designated air transportation, large backlogs of shipments quickly accumulated in US ports because air cargo capabilities could accommodate only a fraction of the amounts requested. (Allen, 1989:137)

Major General Jonas Blank, USAF reported that:

> Flooding the supply system with top-priority requisitions was self defeating. Cargo jammed aerial ports of embarkation and sat there for months, although it could easily have been delivered in less time by surface transportation. (Blank, 1973:7)

The situation continued during the Vietnam Conflict.

Major Stubbs wrote:

> The movement control system provides the vital link between shippers, the Defense Transportation System (DTS), and the user. Lack of it during early Vietnam years caused port congestion at both ends of the transportation system, resulting in delayed receipt of critical material by combat organizations. (Stubbs, 1983:2)

As seen throughout the age of airlift, the shortfall of airlift, planning, or movement control has repeatedly caused airlift channel saturation, backlog, and delays.

Past Solutions

Solutions to asset shortfall problems have centered around the creation of express channels, while control problems were solved through the addition of movement control mechanisms.

Planning. Formalized planning processes were accomplished in peacetime. When problems occurred due to the lack of a plan, there was often only time to create or revise an existing plan to meet the scenario. The two

following sections identify specific solutions for cases of constrained airlift and movement control problems.

Constrained Assets. During World War II one surface and one air channel express channel operation successfully overcame problems caused by constrained airlift assets.

The failure to carry out the 'CHASTITY' resupply plan [to seize Western French ports for more supply support] slowed the Third Army's [Patton] advance" (Allen, 1989:90). Airlift resupply was not an option due to planned airborne operations (Miller, 1988:103). To solve the ensuing gasoline shortage "...Patton initiated one of the most ingenious operations of the war - the Red Ball Express" (Puryear as cited by Allen, 1989:94). It "was an improvised system of any and all trucks that could be spared (mostly 2 1/2-ton cargo carriers) to drive supplies across existing roads to the spearhead of the army attack" (Allen, 1989:88).

The air version of the Red Ball was the airlift channel from the United States to Calcutta, India.

> Support of air operations [including the Burma Hump] was virtually impossible with such extended supply lines, so for high priority items, such as R-3350 engines for the B-29, Air Transportation Command flew a ferry service direct from the States. Pilots would change at every stop, but the plane would continue on to the final destination. By 1944, using the air route, planes could deliver parts from stateside to Calcutta in under some 70 hours, an air distance of some 11,000 miles. (Coakley and Leighton as cited by Allen, 1989:98)

Express channels were also established throughout the Vietnam Conflict to solve both aerial port and airlift channel backlogs.

> Because the airlift mode was particularly over taxed and needed for critical lift requirements, the Joint Chiefs of Staff directed in 1965 an expedited sealift, called Sea Express. Sea Express helped decrease the air cargo backlog in the United States by reducing the sailing time to 20 days. (HQ USAF Corona Harvest Report as cited by Allen, 1989:154)

Red Ball Express number two, an aerial version, operated during Vietnam as well. Like Sea Express, it was created in 1965

> To make sure that truly high-priority items moved quickly, the Red Ball Express system, which was aimed especially at Army vehicles, aircraft parts, and aircraft, came into being in 1965. MAC guaranteed movement within 24 hours of receipt in an APOE. A year later similar procedures were applied (with the 999 program) to all services. (Miller, 1988:329)

USTRANSCOM's General Johnson reported that the Red Ball Express "...enhanced airlift throughput" (Johnson, 1991:24).

Lack of Movement Control. Solutions to movement control problems were also evident in both Korea and Vietnam. In Korea, "the responsibility for the allocation of airlift tonnage to the using services was assigned to the Far East Command Air Priority Board in Tokyo" (Turner, 1985:231). Once airlift was allocated among the services, a theater Joint Airlift Control office (JALCO) "decided exactly what was to be moved, in what priority, and to whom" (Turner, 1985:231).

This solution also worked in Vietnam. The U.S. Pacific Command (PACOM) established a Pacific Movements Priority Agency (PAMPA) to

> ...insure that PACOM-bound sea and air cargo is most effectively moved in accordance with recipient's need for the material, the discharge and clearance

> capabilities of receiving terminals, and the availability of sealift and airlift resources. (CINCPAC Instruction 5400.13A, 1967:1)

The establishment of the PAMPA as a filter "was the single most important element of the movement control system's success" (Stubbs, 1983:3).

Summary. Both problems and solutions were similar from WW II, to Korea, to Vietnam. Repeatedly, lack of assets, plans or movement control led to transportation pipeline problems. In all three conflicts constrained airlift impacted operations. In WW II, this problem resulted in supply shortages. In Korea and Vietnam the problem was congested and backlogged airlift pipeline or channels. In WW II and Vietnam, express channels provided some measure of relief. In Korea and Vietnam, creation of theater movement control agencies solved movement control problems. In each case, however, the express channels and the control mechanisms ended when the conflict ended.

This section has shown the past importance of transportation and the past need for express operations to solve transportation pipeline problems. The following section will show how Operation Desert Shield/Desert Storm further established the need for express operations.

Desert Express Background

Introduction. The events that eventually lead to the creation of Desert Express began in the summer of 1990. The trigger for the events leading to the creation of Desert

Express was the Iraqi invasion of Kuwait on 2 August 1990. On August 6, Saudi Arabia invited U.S. assistance and "On August 7, the president directed the commencement of Operation Desert Shield and ordered U.S. Forces to begin moving to the Persian Gulf area" (AUSA, 1991:5). The first C-141 departed the U.S. on August 7 with elements of the U.S. 82nd Airborne Division aboard (AUSA, 1991:5).

Desert Shield/Desert Storm Overview. Figure 1 depicts a simplified Desert Shield/Desert Storm Timeline. Desert Shield, the build-up of forces in the Arabian peninsula, lasted from August 6, 1990 until the commencement of Desert Storm, combat operations, on January 17, 1991 (AUSA, 1991:2-4). During Desert Shield, increasing volumes of air eligible cargo led, in turn, to CRAF Stage I activation (17 August) (Tow, 1991:48), the proposal and initiation of Desert Express (30 October) (Holt and Mathews, 1991:52-53), and the creation of JCS Project Code 9AU (7 November) (Joint Staff msg, 072054Z November 1990).

On November 8, 1990, President Bush ordered the Phase II deployment of additional troops from the United States and Europe (AUSA, 1991:2). This increased the volume of air eligible cargo. The initiation of the Desert Storm air war on January 17, 1991 increased it again, as shown in Table 1. One result was the addition of a second daily Desert Express flight on January 13, 1991 (USTRANSCOM Chart, 19 May 1991).

The 24-28 February 1991 ground war and resulting cease fire led to: redeployment operations beginning on March 6,

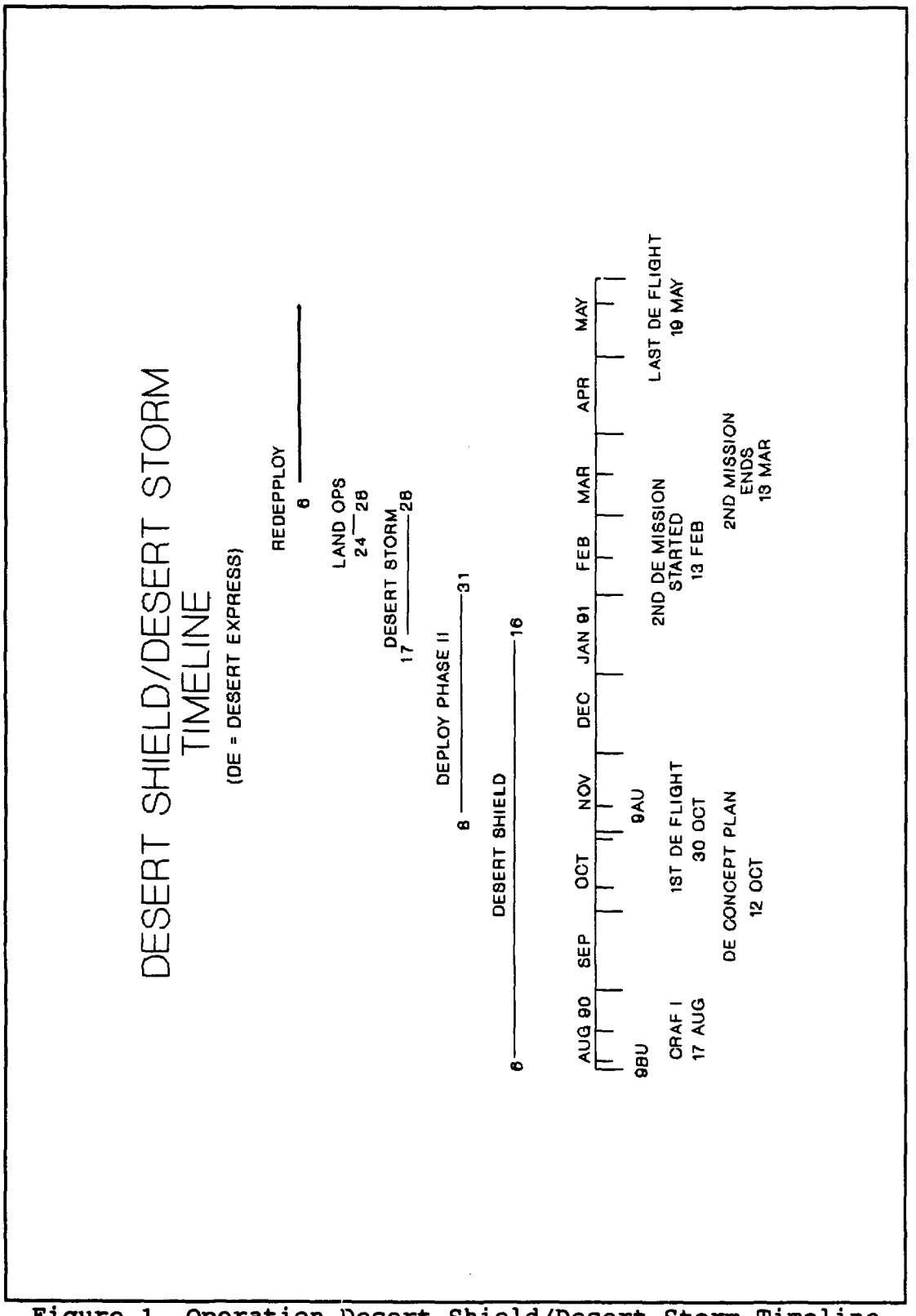

Figure 1. Operation Desert Shield/Desert Storm Timeline

1991 (AUSA, 1991:2-4), the cessation of the second Desert Express flight on March 13, and the cessation of Desert Express in total on May 19, 1991 (USTRANSCOM Chart, 19 May 1991). Redeployment operations continued throughout 1991.

Initial Airlift Operations. As in past conflicts, the Iraqi invasion of Kuwait caught the U.S. Military without an applicable transportation plan. The GAO reported that

> The Central Command's draft operation plan for a contingency similar to Desert Shield had not yet reached the stage where the Transportation Command would have prepared the detailed transportation plan. (GAO, 1992:5)

Constrained airlift also impacted Desert Shield operations. "By mid-August, 95 percent of MAC's operable C-5s and 90 percent of the operable C-141s were flying the pipeline," and "more than 100 civil air volunteer missions were scheduled in those first 10 days" (Tow, 1991:48). General Johnson went a step further by stating that "in the first two weeks of the deployment we had: fully committed our strategic airlift fleet of C-5s and C-141s, ..." (Johnson, 1991:30).

With MAC's strategic airlift fleet committed, Civil Reserve Air Fleet Stage I (CRAF I) was activated on August 17 (Tow, 1991:48). This was the first time CRAF had been called since its inception in 1951 (Johnson, 1991:30).

CRAF is a program designed to supplement the military airlift fleet. It arose from "...the realization that military airlift could not handle the airlift requirements of a more demanding wartime scenario" (Allen, 1989:149).

The program provided an alternative to buying additional military aircraft. Civilian airlines dedicated portions of their commercial fleets to augment MAC in return for preferential peacetime government contracts (Allen, 1989:149).

To meet lift requirements, MAC established three airlift channels, one at each of three initial CONUS APOEs. These were:

1. Dover Air Force Base APOE: Dover-Dhahran (Saudi Arabia)-Bateen (United Arab Emirates).

2. Tinker Air Force Base APOE: Tinker-Riyadh (Saudi Arabia)-Cairo International (Egypt).

3. Norfolk Naval Air Station APOE: Norfolk-Sigonella (Italy)-Jeddah (Saudi Arabia)-Bahrain (Thalheim, 1991:24). Both Dover and Tinker Air Force Bases were peacetime APOEs. The influx of Desert Shield cargo was in addition to their pre-existing missions.

Airlift Channel Backlogs. "By September 11, MAC had moved the required forces and began to focus on sustainment" (Tow, 1991:48), and "...due to the large volume of assets, backlogs occurred at the major ports (Daly, 1991:4). By the end of September 1991 airlift channel backlogs were occurring at all three APOEs. Table 1 identifies these backlogs by APOE.

Webster's Ninth New Collegiate Dictionary defines backlog as: "...an accumulation of tasks unperformed or materials not processed" (Mish, 1986:123). In an airlift

channel example, unperformed tasks equate to all cargo in excess of daily lift capability . Materials not processed refers to cargo arriving at the APOE which could not be processed due to incomplete documentation, or other problems (Quirk, 1992).

Table 1 is based on MAC data gathered by Major Thalheim. Major Thalheim developed his means by selecting 10 daily backlog figures per month. He used calendar day 3, 6, 9, ...30 figures. For February, day 28 was substituted for day 30. These daily figures were then averaged to obtain monthly means (Thalheim, 1991:133-137).

TABLE 1

AERIAL PORT OF EMBARKATION 9BU CARGO BACKLOGS

(MEAN DAILY BACKLOG IN TONS)

	Dover AFB	Tinker AFB	NAS Norfolk
Sep	482.3	146.2	82.2
Oct	336	118.1	102.3
Nov	729.6	414.067	94.2
Dec	1957.1	1373.4	211.2
Jan	2249.2	1171.5	282.1
Feb	1488.7	723.6	144.4
Mar	842.1	323.7	134.8

(Thalheim, 1991:133-137)

It is significant to note that these backlogs were occurring less than two months into the deployment when less than half of the total force had deployed (Holt and Mathews, 1992:52). In addition, 95% and 90% of MAC's C-5 and C-141

aircraft respectively, as well as CRAF I had been committed within the first two weeks of Operation Desert Shield (Tow, 1991:48).

These backlogs resulted, in part, from conditions identified in the Air Force Logistics Management Center report titled *Desert Shield/Desert Storm Supply Lessons Learned*:

> The large volume of cargo led to backlogs at ports. Other contributing factors included: shortage of manpower at ports, frustrated cargo due to improperly marked assets, classified locations for deployed units, non-specific customer addresses, and lack of proper identification. (Crimiel and others, 1992:7)

While this finding indicates a backlog problem, it does not identify causes for the large volume of air eligible cargo.

Increased Cargo Volume. One reason for the increased volume of air eligible cargo were the higher priorities being used by units to requisition material. A story in *Soldier* magazine notes that during the first days of their alert, the 24th Infantry Division "...submitted hundreds of requisitions for equipment and supplies. In some cases, they upgraded the priority of earlier requests" (Miles, 1990:10). A Government Accounting Office report echoed this finding.

> ....because units were preparing to conduct their wartime missions, the use of the high priority code was widespread. One maintenance battalion official said that up to 98 percent of all requisitions were categorized as high priority. (GAO, 1991:32)

Use of higher priorities would not have been a problem except that, under current DOD regulation, air transportation is the designated mode for high priority

cargo (JCS Pub 4-04, 1985:IV-17). This allows critical items to get to the requisitioner in the least amount of time. As more requisitions are marked high priority, more cargo is identified for airlift.

Current Transportation Regulations and Procedures

Before proceeding with discussion of Operation Desert Shield/Desert Storm airlift channel backlogs, further discussion of the current DOD system used to prioritize cargo is in order. Regulations and procedures for establishing priority movement of cargo with in the Defense Transportation System (DTS) are described in the Department of Defense (DOD) Directive 4410.6 *Uniform Material Movement and Issue Priority System* (UMMIPS), and DOD Directive 4500.32R *Military Standard Transportation and Movement Procedures* (MILSTAMP). UMMIPS provides standards for establishing cargo priority designators. MILSTAMP provides performance standards for the movement of cargo dependent on a transportation priority derived from the UMMIPS Priority Designator (PD).

UMMIPS. The UMMIPS is the system by which all organizations within DOD are "prioritized in terms of their importance for support" (Cook and others, 1988:1-1). The UMMIPS does this by assigning a two digit priority designator (PD) to each shipment. The PD in turn, is based on two other factors; the requisitioning unit's Force

Activity and Urgency of Need Designators, (FAD) and (UND) respectively (Cook and others, 1988:1-1).

The FAD is a classification (I-IV) assigned by the Secretary of Defense (SecDef), Joint Chiefs of Staff (JCS), or DOD Service Component, "...to indicate the mission essentiality of a unit, organization, installation, project, or program to meet national objectives" (DOD Dir 4410.6, 1980:1). The assignment of FAD I is reserved for units "...which are most important militarily as determined by the JCS and approved by the SecDef" (Cook and others, 1998:1-2).

FADs II-IV will be assigned by DOD Service Components when allowed by the JCS. Table 2 describes the conditions under which each FAD is assigned. To facilitate optimal material readiness, a higher FAD may be assumed by a unit 90 days prior to its scheduled departure (DOD Dir 4410.6, 1980:2-3).

The UND is a priority consideration based on need as determined by the unit making the requisition. The UND indicates the unit's need for material to accomplish its assigned mission (Cook and others, 1988:1-2). Table 3 describes the conditions under which UNDs are chosen.

Priority Designators are derived from combining the FAD and UND. Table 4 shows how the FAD and UND intersect to establish the UMMIPS PD.

TABLE 2

FORCE ACTIVITY DESIGNATORS

FAD	Meaning
I	It refers to forces which have been specifically designated by the SECDEF upon JCS recommendation.
II	These are the CONUS combat ready forces (ready for immediate deployment within 24 hours), or direct combat ready support forces deployed outside of the CONUS.
III	Other combat ready forces outside of the CONUS not in FAD II, or CONUS units ready to deploy in D+30 days.
IV	Forces ready to deploy in D+30 to D+90, or programs for the planned improvement of defense or national objectives.
V	All other U.S. forces and activities.

(DOD Dir 4410.6, 1980:2-3)

TABLE 3

URGENCY OF NEED DESIGNATORS

UND	Meaning
A	The item is required for immediate end use and without which the Force/Activity is unable to perform assigned operational missions.
B	The item is needed immediately, but the mission is impaired, not stopped without the item, or for repair that can be delayed temporarily.
C	The item is required for replenishment of stock to meet authorized stockage objectives.

(DOD Dir 4410.6:4-5)

TABLE 4

UMMIPS PDs

	UND	A	B	C
FAD	FAD I	1	4	11
	FAD II	2	5	12
	FAD III	3	6	13
	FAD IV	7	9	14
	FAD V	8	10	15

(DOD Dir 4410.6, 1980:6)

Because units determine their own UND, they have the capability to establish a higher than required priority, in effect, abusing the priority system. Therefore, UMMIPS states that responsibility for controlling priorities lies with the unit commander:

> Commanding officers or the heads of requisitioning installations are responsible for the accurate assignment of Priority designators consistent with FADs assigned by higher headquarters and with existing urgency of need..." (DOD Dir 4410.6, 1980:7)

Commanders must personally review or delegate in writing the authority to review all requirements based on UND A to certify an inability to perform their mission (DOD Dir 4410.6, 1980:7). The inclusion of the commanding

officer as the "honest broker" in the process was intended to check possible abuses by overzealous supply clerks.

There is another side to the discussion of UNDs. That is the authorized use of a higher UND based on the Table 3 definitions. The 1988 *Joint Material Apportionment and Allocation* report prepared under contract for the Joint Chiefs of Staff J-4 notes that "During the early stages of a crisis, however, many more units would be authorized to submit higher priority requisitions in order to achieve wartime material readiness levels" (Cook and others, 1988:2). Referring back to an earlier quote, it appears that the 24th Infantry Division's "widespread" use of higher priority codes may, in fact, have been the correct action.

As a unit prepares to deploy, everything is mission essential, and could effect its ability to perform its mission. Thus, the system is already designed to backlog airlift channels.

Once the PD has been determined, a Standard Delivery Date (SDD) is established. The SDD is a given number of days, beginning with the requisition date, by which delivery of the material must be accomplished. Table 5 shows the UMMIPS PDs and their corresponding delivery standards as summarized in Army Regulation.

MILSTAMP. The objective of the MILSTAMP is to provide guidance for the shipment of material based on the UMMIPS PD/SDD. The MILSTAMP does this through the assignment of a Transportation Priority (TP). The TP establishes the order

of handling and the recommended mode of movement (DOD Dir 4500.32R, 1991:B14-1). Table 6 shows this relationship.

TABLE 5

STANDARD DELIVERY DATE

PD 01-03: Must arrive at an overseas destination within 12 days of requisition.

PD 04-08: Must arrive at an overseas destination within 16 days of requisition.

PD 09-15: Must arrive at an overseas destination within 82 days of requisition.

(AR 725-50, 1986:21)

TABLE 6

TRANSPORTATION PRIORITY/MODE DESIGNATORS

UMMIPS Priority Designator	Transportation Priority	Shipment Mode
01-03	1	Air
04-08	2	Air
09-15	3	Surface

(JCS Pub 4-04, 1985:IV-17)

As with the UMMIPS Priority Designators, MILSTAMP Transportation Priorities are defined in the regulation, and can only be assigned if the shipment meets the stated conditions. These conditions are summarized in Table 7. The UMMIPS Standard Delivery Date criteria are reiterated in the table for clarification.

Once a shipment is determined to be a TP-1, there are additional expedited handling signals or codes within MILSTAMP which provide for expedited service when required. These signals or codes, usually acronyms, are written directly on the shipping documents (DOD Dir 4500.32R, 1991:2-B-3, B13-3, B14-3).

NMCS. The first expediting signal is called Non Mission Capable Supply (NMCS). NMCS is used when equipment, aircraft, and engines either are, or are expected to be out of commission for parts. The commander will personally approve or delegate in writing the authority to approve all NMCS requisitions (DOD Dir 4500.32R, 1991:B14-3).

The ability to use this signal when parts "are expected to be out of commission" allows requisitioning to occur before parts are actually required. The GAO stated that the deputy commander for maintenance at one desert Air Force base "ordered MICAP parts before parts had been broken or reached their change-out date" (GAO, 1991:32). While this may be a smart management tool, it increased the load on the airlift channels.

TABLE 7

TRANSPORTATION PRIORITIES (TP)

Transportation Priority One (TP-1):

Material (items) destined for US forces: in combat and other forces or activities...designated by the JCS; positioned and maintained in a state of readiness for immediate combat or direct combat support; or, positioned and maintained in a state of readiness to deploy for combat and for other activities essential to combat forces. The material must be of such importance that: the lack of it will prevent the force or activity form performing assigned operational missions or tasks, or such condition is pending; it is required to effect emergency repairs to primary weapon systems; or, it is required to remove primary weapons and equipment from deadline status (AFR 76-38, 1982:16).

TP-1 shipments must arrive at an overseas destination within 12 days of requisition (AR 725-50, 1986:21).

Transportation Priority Two (TP-2):

Material (items) destined for US forces: in combat and other forces or activities...designated by the JCS; positioned and maintained in a state of readiness for immediate combat or direct combat support; or, positioned and maintained in a state of readiness to deploy for combat and for other activities essential to combat forces. The material must be of such importance that it is required for immediate use, and the lack of it is impairing the operational capability of the force or activity concerned (AFR 76-38, 1982:16).

TP-2 shipments must arrive at an overseas destination within 16 days of requisition (AR 725-50:21).

Transportation Priority Three (TP-3):

Material (items) destined for US active and selected Reserve forces....that are planned for employment to support approved war plans and support activities essential to such forces or activities receiving military assistance. The material must be of such importance that it is required for immediate use, and the lack of it is impairing the operational capability of the force or activity concerned (AFR 76-38, 1982:17).

TP-3 shipments must arrive at an overseas destination within 82 days of requisition (AR 725-50, 1986:21).

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999. The second signal is referred to as "999" or triple-nine. When the code 999 is entered in the RDD of a TP 1 requisition, it "...overrides all other priorities, projects, and RDDs" (DOD Dir 4500.32R, 1991:2-B-3). 999 is used only when the following conditions are met:

1. The requisitioning unit possesses FAD I, II, or III and

2. The items required are causing mission-essential systems or equipment to be incapable of performing their assigned mission (DOD Dir 4500.32R, 1991:B14-3).

Green Sheet. The third signal is called Green Sheet. Green Sheet is a procedure for cargo in the MAC airlift system. "It is not a priority, but is designed to override priorities and RDD 999 when expedited movement of specific shipments is required in the national interest..." (DOD Dir 4500.32-R, 1991:2-B-3). Green Sheeting is only permitted within a service, e.g., the Army can only Green Sheet Army cargo ahead of other Army cargo. Other services cargo in the same channel is unaffected. Green Sheeting is not allowed if other priorities will meet movement requirements. The shipper must request Green Sheet through their Air Clearance Authority (DOD Dir 4500.32R, 1991:2-B-3).

Joint Chiefs of Staff Project Code. The final expediting signal is the Project Code. "Project Codes are used for the purpose of distinguishing requisitions and the accumulation of intra-Service performance and cost data

related to exercises, maneuvers, and other distinct programs" (DOD Dir 4500.32R, 1991:B13-1).

Project codes not assigned by the SecDef/JCS "...do not provide nor imply any priority or precedence" (DOD Dir 4500.32R, 1991:B13-1). Project codes are categorized into four groups and the authority to assign project codes varies by category. Category D project codes are the SecDef/JCS codes. Category D requisitions "...will be ranked above all other requisitions with the same priority designators for processing purposes" (DOD Dir 4500.32R, 1991:B13-3).

Category D project codes are three digit alpha numeric codes beginning with the number 9. There are four sub-categories under Category D:

1. 9/numeric/numeric - reserved for SecDef.
2. 9/numeric/alpha - JCS allocation code.
3. 9/alpha/numeric - JCS release of emergency or reserve material.
4. 9/alpha/alpha - identifies support provided to a program, project, force, or for other designated purposes (DOD Dir 4500.32R, 1991:B13-1,2,3,4).

During Operation Desert Shield Desert Storm, two category D JCS Project Codes were used, 9BU and 9AU. Code 9BU was established as part of the deployment order to identify and provide expedited service to all Desert Shield TP-1 shipments (Thalheim, 1991:47).

Each of these expediting signals provides a priority within a priority. All four of these expedited handling

signals were in effect from the start of Operation Desert Shield. When this procedure is used, management of the cargo flow becomes complex.

Abuse or Not. The preceding discussion identified the process by which material requisitions and shipments are prioritized, and then further prioritized for expedited handling. As shown, high priority cargo required air shipment during Operation Desert Shield/Desert Storm. It follows, therefore, that high priority cargo further coded as an expedited shipment also required air shipment.

Discussion of any real or perceived priority abuses is not within the scope of this Thesis. The fact that regulations allowed the legitimate creation of large volumes of high priority requisitions makes the question of abuse immaterial. It has been established that there was sufficient regulatory maneuvering room to flood the airlift channels with out abusing either the UMMIPS or MILSTAMP.

In addition, the Secretary of Defense has already addressed the issue in a memorandum that directs

> The Chairman of the Joint Chiefs of Staff, after coordination with the Assistant Secretary of Defense for Production and Logistics, CINCTRANS, and such other department officials as may be appropriate, shall submit to me [SecDef] for approval any changes to the transportation movement priority system necessary to ensure its responsiveness to the commanders or the unified and specified commands and other DOD components requiring transportation services. (Secretary of Defense Memorandum, 1992:2)

This subject is therefore directed for future research.

No Priority System. Refocusing on Operation Desert/Shield Desert Storm, during September 1991, all three initial APOEs were backlogged.

What happens when the majority of the increased wartime volumes of cargo entering the airlift channel is high priority? The 1988 Material Apportionment and Allocation Study stated that "UMMIPS cannot distinguish between claimants with equal priority during a crisis" (Cook and others, 1988:3). When all shipments have equal precedence, in effect, a no priority system results (Sledge, 1992). This is precisely what happened during the early stages of Operation Desert Storm Desert Shield.

A 26 August 1991 Department of the Air Force White Paper on USAF Transportation stated that "it was not unusual for aerial port backlogs to be 80% Priority 1/999 cargo" and that "...when everything is priority, nothing is priority" (HQ USAF White Paper, 1991:14). When this condition exists, individual shipment priorities are irrelevant and cargo moves similar to a first-in-first-out process. The GAO confirmed this in their after action report to Congress. It paraphrased Defense Logistics Agency (DLA) officials as saying that:

> ...in the initial phase of Desert Shield they were overwhelmed with high priority requisitions for the items they managed. Thus, until they received distribution guidance from the designated theater commanders, they issued items on a first-come, first-serve basis. (GAO, 1991:32)

The Air Force White Paper echoed this sentiment, stating that when "...virtually all cargo is of equal priority, MAC has no alternative but to load cargo 'first in-first out'" (HQ USAF White Paper, 1991:14).

Summary. As the backlogs continued, customer service became an issue. The customer set the priorities, and expected the transportation system to respond accordingly. This was not always the case. The situation came to a head when the U.S. Army Aviation Support Command (AVSCOM) informed USTRANSCOM that the that the transportation time for shipping 999 material to Saudi Arabia was not meeting UMMIPS standard delivery times and was unacceptable (Engle, 1992). As a result of this and the other problems, the Commander, USTRANSCOM proposed a premium transportation system to move the highest priority parts to the theater (USCINCTRANS/TCJ3-J4 msg, 121835Z October 1990).

Set-up and Operation of Desert Express

Proposal. In a repeat of past solutions, CINC USTRANSCOM asked CINC USCENTCOM, and directed MAC, to consider an express delivery service (USCINCTRANS/TCJ3-J4 msg, 121835Z October 1990). However, the USTRANSCOM concept was to provide a "new" service, not a work-around or band-aid. MAC's implementing instructions called Desert Express "...concept new to the Defense Transportation System" (HQ MAC/TR msg, 232130Z October 1990). Any external mention of

Desert Express as a work-around to bypass the clogged APOEs was notably absent from all message traffic.

The USTRANSCOM proposal called for a U.S. east coast military APOE to "...serve as the collection point for logistics parts which the Army, Air Force, Navy, and Marine Corps had delivered by commercial airlift..." (Holt and Mathews, 1992:53).

USTRANSCOM wanted to use Dover Air Force Base because it was the largest and best equipped APOE. Additionally, the Dover-Dhahran channel was already established. However, the Dover APOE "...was stretched to the limit fulfilling the full spectrum of Desert Shield requirements" (Holt and Mathews, 1992:53).

MAC favored establishing a new channel from a new APOE. Its choice was Charleston Air Force Base. MAC's reasons were:

1. The joint-use runway Charleston shared with the Charleston Municipal Airport.

2. Small package carriers, such as United Parcel Service, Emery, and Federal Express, made deliveries to Charleston Municipal Airport five days per week.

3. Charleston Air Force Base was a regular stop for the Air Force's LOGAIR and the Navy's QUICKTRANS CONUS airlift systems.

4. The availability of MAC organic aircraft and support; along with the ability to dedicate APOE cadre to

Desert Express (MAC/TR msg, 232130Z September 90; Holt and Mathews, 1992:53).

Consequently, Charleston Air Force Base was selected as the Desert Express APOE. Implementing instructions were provided in USCINCTRANS/TCJ3-J4 msg, 202246Z, 20 October 1990 and spread from receiving higher to lower headquarters throughout the DOD.

Qualification for Desert Express. Desert Express was designed to move "show stopper" items only. Rather than issue a universal definition, MAC's instructions stated "Desert Express is designed for 'show stopper' critical repair parts as determined by the services" (HQ MAC/TR msg, 232130Z October 1990). It was left to each Service to determine what "show stopper" meant for them.

USTRANSCOM emphasized that the

> concept will work only if Services discipline priority system to ensure only show stopper repair parts are offered for movement on Desert Express. (USCINCTRANS/TCJ3-J4 msg, 121835, 12 October 1990)

Table 8 provides the Army and Air Force definitions.

Space Allocation. As only one C-141 was used for the Desert Express missions, allocating space to each Service was as important as eligibility. USTRANSCOM based initial space allocated to each service on "...force structures in the AOR and the level of their operational activity" (Holt and Mathews, 1992:56). Initial allocations were: (USCINCTRANS/TCJ3-J4 msg, 202246Z October 1990)

Army	5 pallet positions; 15,000 lbs; 2500 cu ft.
Air Force	4 pallet positions; 12,000 lbs; 2000 cu ft.

Navy	2 pallet positions;	6,000 lbs;	1000 cu ft.
Marines	1 pallet position;	3,000 lbs;	500 cu ft.

TABLE 8

"SHOW STOPPER" DEFINITIONS

Army: Requisitions identified as not mission capable supply (NMCS) Issue Priority Designator (IPD) [UMMIPS PD] 02 with expedited handling signal 999 and assigned End Item Code (EIC) for spares and repair parts for the combat weapons systems identified below, and medical supplies (with the exception of DLA medical stocks) IPD 05 and above, will be used initially for Desert Express start up (HQDA msg, 291035Z October 1990).

(The systems identified were: [Helicopters] AH64, AH1/F, UH1/H/V, UH60/A/V, EH60, OH58C/D/S, UH1V, CH47, AH1 [Armored Vehicles] M1/A1, M2/3, M60A3, M88, M113, M102, M109A1, M110, M163A2, M167A2, M198, M551, M578 M966, Patriot, and MLRS) (HQDA msg, 291035Z October 1990).

Air Force: Items with an urgency justification code [internal Air Force coding] of 1A (MICAP aircraft parts), 1E (MICAP communication parts), 1M (engine MICAPS), or specific items identified in the supported commands daily SITREP or LOGSTAT reports (HQ AFLC/DS msg, 231900Z October 1991).

Daily allocations were strictly controlled, and MAC was clear to point out that: "CHS [Charleston] Desert Express is not a free flow port. Services must ensure that every effort is made to limit clearance to allocation" (HQ MAC/TR msg, 232130Z October 1990).

MAC warned that small overages would be held for following missions, but "clear failure to comply with Service allocation (i.e., several pallets over) will result in diversion to appropriate common-user APOE with notification to Service POC" (HQ MAC/TR msg, 232130Z October

1990). Like the USTRANSCOM implementing message, this was an attempt to force the services to identify only those items with the highest priority and conforming to the allocated weight and cube specifications.

Inception. With the rules established, the first Desert Express flight occurred on October 30, 1990. The 347th Military Airlift Wing, Charleston AFB, operated one C-141 mission per day from Charleston AFB through Torrejon Air Base, Spain, to Dhahran, Saudi Arabia. Figure 2 depicts the Desert Express route.

To feed the APOE, high priority items were shipped from CONUS origins using overnight express or hand delivery ensuring arrival at Charleston (APOE) daily by 1030 local time. Desert Express departed at 1230 local time. "The 1030 [delivery] cutoff time dovetailed with the overnight mail and express parcel delivery schedules in the United States and the flight schedules of LOGAIR and QUICKTRANS" (Holt and Mathews, 1992:54).

Mission Summary. This section summarizes one Desert Express flight to provide an understanding of the system. This description is paraphrased from David A. Fulgham's article "MAC 'Desert Express' Rushes Priority Supplies to Mideast," in the December 3, 1990 issue of *Aviation Week & Space Technology*. Mr. Fulgham accompanied several Desert Express flights during November 1990.

Delivery of critical items arrived at Charleston APOE by way of commercial air/ground express carriers which

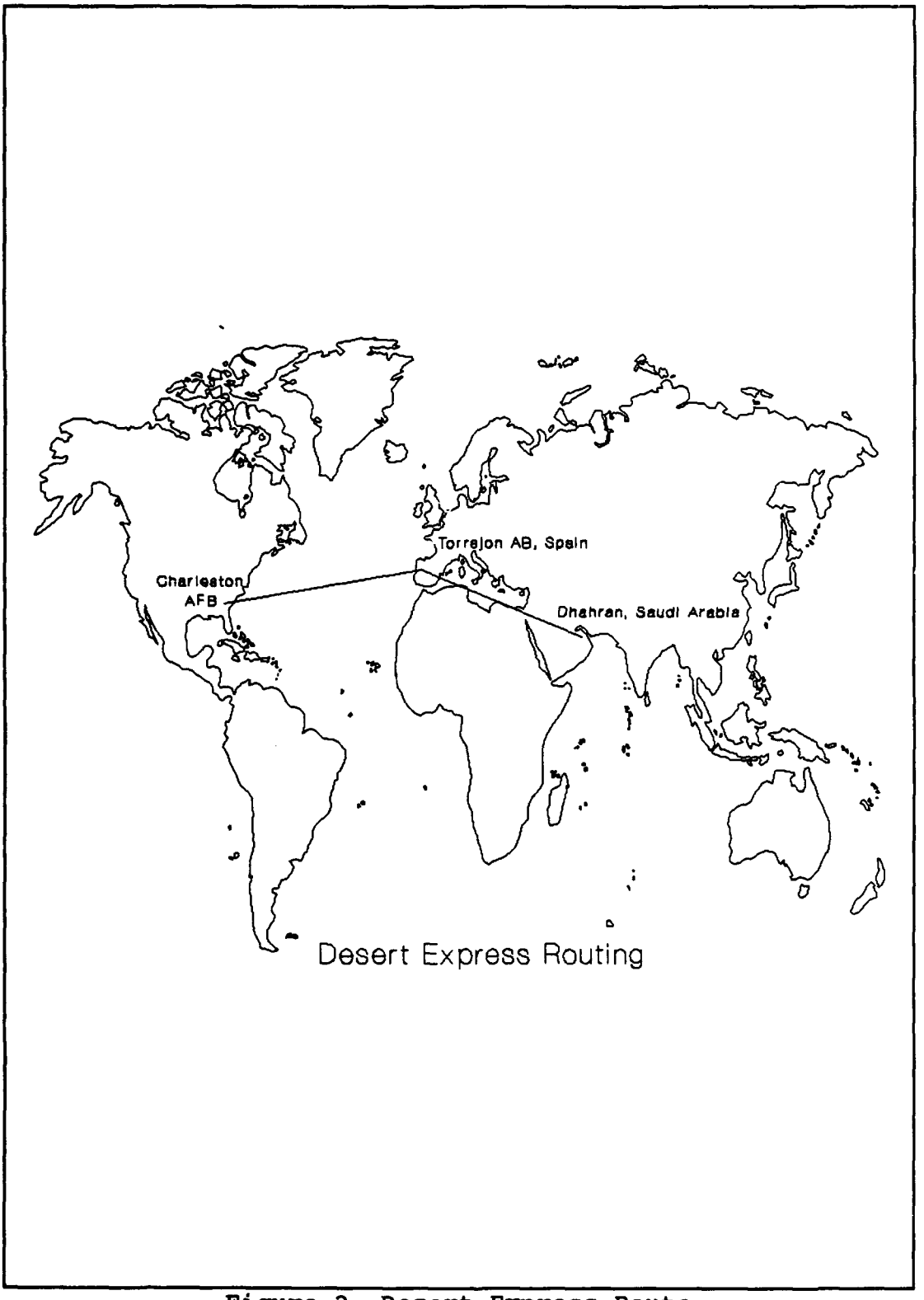

Figure 2. Desert Express Route

(HQ MAC/TR msg, 232130Z October 1991)

guaranteed delivery by 1030 hours daily. This allowed time for the 437th Aerial Port Squadron to process and prepare the items for the 1230 Desert Express flight (Fulgham, 1990:20).

Desert Express had priority over everything else, and 15 members of the 437th were assigned to ensure the flight was ready on time. The daily flight did not carry much, usually less than 40,000 lb., "but an item may enable an aircraft to fly or return a tank to operation" (Fulgham, 1990:20).

Each morning before a flight, the 437th handled up to 200 items in a half hour. Each shipment was put into a painted space on a warehouse floor according to its ultimate destination. After packages had been sorted by this method, pallets were constructed by destination (Fulgham, 1990:20).

Outgoing packages were entered into a computer linked with Saudi Arabia. This allowed the receivers in theater to know what was coming. "Moreover, each is carefully monitored to prevent abuse of the priority system. [Senior Master Sergeant] Donovan makes sure there is no 'triple nine' toilet paper" (Fulgham, 1990:20).

In a procedure reminiscent of the World War II U.S to India channel, the only enroute stop for Desert Express was at Torrejon Air Base, Spain, for refueling and crew change. Desert Express went to the head of the line. Air crews were rotated, and a back-up crew and C-141 were standing by in case the primary aircraft developed problems. The refueling

and crew change took one hour and fifteen minutes. If required, the load could be transferred to the backup aircraft in fifteen minutes. During the first month of Desert Express, all departures from Spain were on time (Fulgham, 1990:20).

At Torrejon, a third pilot was added to the crew to serve as another set of eyes over the crowded APOD. As the flight neared Dhahran, the crew notified the APOD, who in turn mobilized the unload teams, fuel crews, and maintenance crews. Ground control also logged the arrival with CENTCOM headquarters (Fulgham, 1990:22).

The flight was assigned ramp space, and cargo was unloaded and broken down by service,

> ...or in the case of Desert Express material, it was quickly transferred to any of up to seven C-130s available to fly short-haul Camel Express (cargo) or Star Route (personnel) flights to the various bases in the Persian Gulf Region. (Fulgham, 1990:22)

Transportation time from Charleston to Dhahran "...was as low as 16 hours and 15 minutes" (Fulgham, 1990:20). The departure reliability for Desert Express missions from Charleston and Torrejon was 100 percent during that first critical month (Fulgham, 1990:22).

Project Code 9AU. At this point, all shipments to Saudi Arabia were covered under JCS Project Code 9BU. To delineate Desert Express cargo from routine Operation Desert Shield cargo, the Joint Chiefs of Staff authorized a separate project code, 9AU, for Desert Express shipments (Joint Staff, msg 072054Z November 1990).

Desert Shield Phase II. On November 8, 1990, President Bush ordered an additional 200,000 troops to the Persian Gulf (AUSA, 1991:2). As a result, backlogs at the three initial APOEs (Dover, Tinker, Norfolk) rose significantly (Table 1). The Desert Express channel also began to experience backlogs (Figure 3).

Desert Express was designed for zero backlogs "...the implicit goal was to have zero cargo backlog at Charleston AFB aerial port after each Desert Express mission departure" (Thalheim, 1991:91). Implementing instructions stated that "...Services must ensure that every effort is made to limit clearance to allocation" (HQ MAC/TR msg, 232130Z October 1990). A backlog indicated a Service lacked control or simply, failed to comply.

As part of the push to get maximum combat capability in theater by the January 15, 1991 deadline, Desert Express policies were changed to help. On January 4, 1991 married pallets were allowed (HQ AFLC/DSTL msg, 041645Z January 1991). This enabled large items, such as aircraft engines, to be shipped via Desert Express. Additionally, the pallet allocations were changed to reflect changing usage. "The new allocations were: Army - six, Air Force - five, and Navy/Marines - one (shared)" (Thalheim, 1991:48).

Desert Express II. On January 12, 1991, USCENTAF Rear sent a message to USTRANSCOM requesting a review of airlift being applied to Desert Express. The message said "Desert Express has been extremely successful..." however:

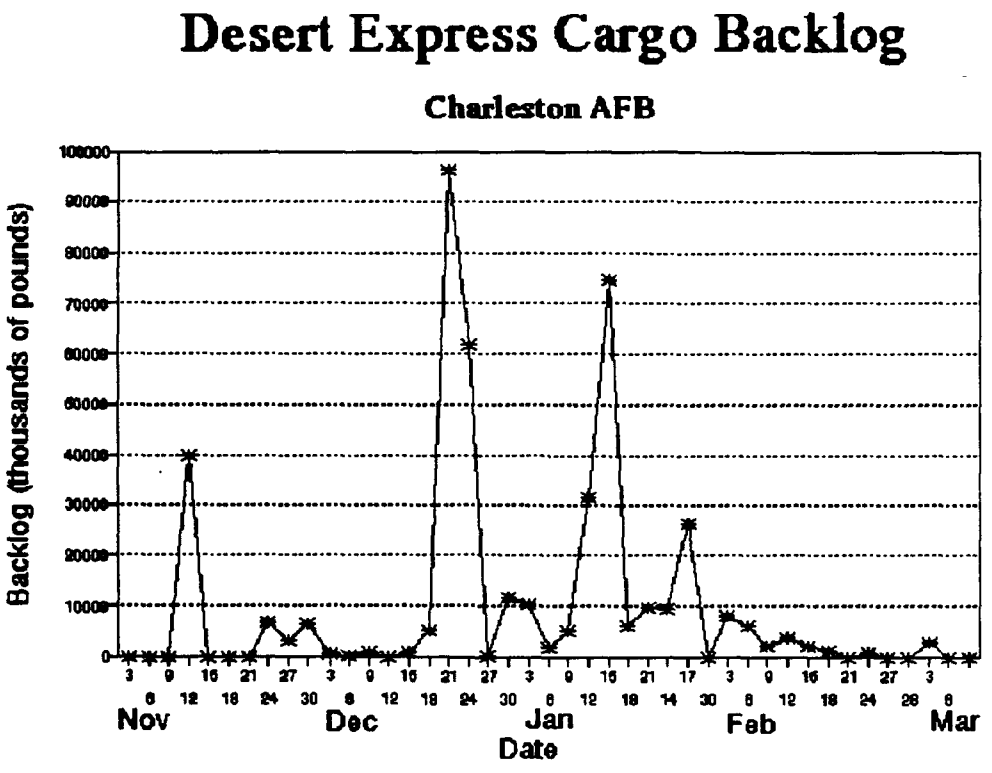

Figure 3. Mean Cargo Backlog at Desert Express APOE

(Thalheim, 1991:138)

> ...with Phase II of Desert Shield and increased activity in the AOR during recent weeks, we are generating more valid Desert Express cargo than permitted by our allocation. We cannot afford to divert this cargo to normal channel lift. (USCENTAF Rear msg, 120308Z January 1991)

The message concluded by asking USTRANSCOM to "...ensure adequate airlift is being provided for our critical cargo necessary to support in-place forces" (USCENTAF Rear msg, 120308Z January 1991).

Desert Express business and backlogs continued to increase throughout January 1991 (Figure 3). Therefore, a second daily Desert Express mission was added on February 13, 1991. The mission flew daily at 1400 hours local time. Following the ground war, need for the second mission diminished and it ceased to fly after March 13, 1991 (USTRANSCOM Chart, 19 May 1991).

Desert Express Terminated. After March 3, 1991, Desert Express backlogs dropped to zero (Figure 3) and after March 13, one Desert Express mission met requirements. As the cease-fire took effect, business declined. Desert Express flew its last mission on 19 May (USTRANSCOM Chart, 19 May 1991). After this point, the original APOEs fulfilled airlift channel requirements.

Desert Express Conclusions

Even though Desert Express accomplished its mission, it did not operate error free. There were numerous good and bad points raised in message traffic during its life, and in after action reviews since. This section highlights these

points, many of which form the basis for both the questionnaire and expert respondent list developed in Chapter Three.

Praise for Desert Express. The foremost comment concerning Desert Express success is from the Commander of the USTRANSCOM, General Johnson. He stated that "we need to institutionalize this process so we won't have to reinvent the wheel every time we have a D.S. [Operation Desert Shield]" (CINCMAC/CV note, 15 August 1991).

Other favorable comments were made during the operation of Desert Express. A January 15, 1991 message from Headquarters, Air Force Logistics Command, to USTRANSCOM stated that "Desert Express has been a success, we believe, because of the hard work and cooperation of the many people involved" (HQ AFLC/DST msg, 151700Z January 1991).

Additional successes were mentioned in the myriad of after action reviews, reports, and articles written since Operation Desert Shield/Desert Storm. The Air Force Logistic Management Center Supply Lessons Learned includes the statement "Desert Express was a resounding success" the basis for this claim is that "...the average in-transit time for mission capabilities (MICAP)[NMCS] was reduced from approximately ten to four days" (Daly, 1991:3).

The Army also praised Desert Express. Major General Fred Elam, Assistant Deputy Chief of Staff for Logistics, Department of the Army stated: "The service filled a critical need for resupply for Army units building

facilities in bare base situations" (Elam as cited by Thalheim, 1991:104).

Desert Express Criticism. The literature revealed numerous criticisms of Desert Express. Most of these were limited to the actual day to day operational procedures, e.g., cargo clearance, backlogs, and documentation. There were no comments stating that Desert Express was an out-and-out failure.

A case in point is a November 23, 1990 message from Headquarters, Tactical Air Command to its subordinate units. It states: "Thanks to your hard work, Desert Express is getting the job done. 'Showstopper' MICAPS [NMCS] are moving faster than ever before" (HQ TAC/LGT msg, 231840Z November 1990). After this pat on the back, the message continued "...Charleston AFB reports they are not receiving some shipping documents stamped Desert Express" and "AFLC reports that in some cases, TMO's [Transportation Movement Officers] are not clearing shipments [through the Airlift Clearance Authority] prior to movement" (HQ TAC/LGT msg, 231840Z November 1990).

The issue of documentation and clearance were the dominant subjects of most message traffic and after action reports. These problems also contributed to backlog problems for both normal (9BU) and Desert Express (9AU) channels. A December 7, 1990 Department of the Army message stated that: "Backlog at aerial ports is growing at an

alarming pace. Backlog threatens MAC's ability to meet even hi-pri requirements" it continued

> ...air challenge efforts have only been able to reduce about 10% of requirements. Additional reductions must come from efforts to discipline requisitioning priorities. (HQDA msg, 072244Z December 1990)

The problem was not solved, for a January 29, 1991 Department of the Army message stated that: "Backlogs at aerial ports continues to grow despite Army daily allocation." As a partial solution, the message told Charleston APOE that "all cargo arriving at Charleston not cleared for Desert Express should be frustrated and offered to LCA [Army Logistics Control Agency] for diversion" (HQDA msg, 291945 January 1991).

The literature revealed more such cases spread between the Air Force and Army. It is sufficient to state that the majority of negative traffic during Desert Express concerned these subjects.

Summary. The creation of Desert Express helped bypass initial APOE backlogs, but did not eliminate them. As stated, Desert Express became backlogged itself through over clearance and documentation problems.

The positive comments were summed up well by Colonel David Davis, a member of the MAC Crisis Action Team (CAT). He stated: "Desert Express gave the ultimate customer, CINCCENT, what he wanted and needed. It got his high priority items to the theater by MAC air-fast!" (Tow, 1991:48).

One issue affecting the analysis of Desert Express, is whether it lasted long enough. The actual period of combat was so short that the impact of combat losses on the system was never tested. This limits the analysis to opinion, and is one of the questions addressed in the Chapter Three Delphi process.

Key Players

This portion of the Literature Review documents the rationale for selecting a panel of experts to assist in this research. Authority and responsibility of panel member organizations are provided by reference to official documents.

As noted in Chapter One, General Johnson's remark that "we need to institutionalize..." (CINCMAC/CV note, 15 August 1991), could mean anyone from USTRANSCOM, to MAC, to the entire Defense Transportation System (DTS). Our review of the "we" in General Johnson's remark assumes he was referring to the DTS in total. Determining the "we" was the first step in the Delphi panel selection process. The message traffic generated during the planning, creation, and operation of Desert Express provided a possible list of agencies involved. This is logical, in that, uninvolved agencies would not be contacted, while all those involved would be.

The addressees on USTRANSCOM's Desert Express implementing instructions message included: USCINCCENT

[USCENTCOM], USCENTCOM REAR, CINCMAC, Headquarters U.S. Army, Headquarters U.S. Air Force, Chief of Naval Operations [Headquarters U.S. Navy], Commandant U.S. Marine Corps [Headquarters U.S. Marine Corps], Defense Logistics Agency, and the Joint Staff. Using this initial list of key players, the next step was to "drill down" through each organization and identify the players at each subsequent level. Once this was accomplished, key player logistical/sustainment responsibilities were reviewed and compared against Desert Express realities.

Department of Defense Directive 5100.1 Functions of the Department of Defense and Its Major Components defines the Department of Defense as

> ...composed of the Office of the Secretary of Defense (OSD), the Military Departments and the Military Services within those Departments, the Joint Chiefs of Staff (JCS) and the Joint Staff, the Unified and Specified Combatant Commands, the Defense Agencies and DOD Field Activities, and other such offices, agencies, activities and commands as may be established or designated by law, or by the President of the Secretary of Defense. The functions of the heads of these offices shall be assigned by the Secretary of Defense in accordance with existing law. (DOD Dir 5100.1, 1987:1)

Each of the addressees on the TRANSCOM message can be found in this paragraph. The Joint Staff is self evident. USCINCCENT and USCENTCOM REAR are elements of the Unified Command responsible for Operation Desert Shield/Desert Storm operations. The Service headquarters addressed represent the three Military Departments. The Defense Logistics Agency is a Defense Agency.

Chairman, Joint Chiefs of Staff (CJCS). The CJCS "...acts as the spokesman for Commanders of the Unified and Specified Combatant Commands, especially on the operational requirements of their commands" (DOD Dir 5100.1, 1987:3). The CJCS has a staff [Joint Staff] to assist him. Table 9 outlines some of the key Joint Staff responsibilities.

TABLE 9

KEY JOINT STAFF RESPONSIBILITIES

1. Prepare strategic plans.....

2. Prepare joint logistics and mobility plans to support those strategic plans and recommend the assignment of logistics and mobility responsibilities to the Armed Forces... (DOD Dir 5100.1, 1987:4).

3. Establish procedures....for submission of movement requirements by DOD user components, and

4. Prescribe a movement priority system in consonance with UMMIPS that will ensure responsiveness to meet the requirements of the using force (JCS PUB 4-04, 1985:II-2).

5. Monitors the activities of the U.S. Transportation Command.

6. Chairs the Joint Transportation Board, which decides how vital strategic mobility resources would be allocated in activities of the CJCS (Honor, 1989:4).

Unified/Specified Combatant Commanders. All U.S. forces deployed in Desert Shield came under the command of U.S. Army General H. Norman Schwarzkopf, commander in chief of U.S. Central Command (USCENTCOM) (AUSA, 1990:6) USCENTCOM is a Unified Command (Magness, 1991:2-24). Table

10 provides key Unified Command CINC logistical responsibilities.

To accomplish these tasks, the Specified/Unified Commander has a joint staff which includes a Joint Material and Priority Board. This board:

> ...modifies and recommends priorities for allocations of material assets for the fulfillment of logistical requirements of the theater, and reviews, acts, or forwards to JCS requests for the modification of FADs. (JCS Pub 4-0 Proposed Final, 1992:B-15)

FAD modification directly impacts the ability of assigned units to requisition at the highest priorities, and therefore, the number of high priority requisitions entering the airlift channels.

TABLE 10

KEY CINC LOGISTICAL RESPONSIBILITIES

1. Giving authoritative direction to subordinate commands and forces necessary to carry out missions assigned to the command, including authoritative direction over all aspects of military operations, joint training, and logistics (DOD Dir 5100.1, 1987:8).
2. ...review[ing] requirements of the Service component commands and establish[ing] priorities and programs to use supplies effectively (JCS Pub 4-0 Proposed Final, 1992:I-9).
3. Develop[ing] his concept of deployment based upon [JCS] guidance (JCS Pub 4-0 Proposed Final, 1992:IV-15), [and] determine[ing] the movement requirements for their area of contingency (Johnson, 1991:28).
4. ...use[ing] the lift capability allocated [by the JCS] to meet competing needs for forces and resupply to sustain in-place and augmenting forces (JCS Pub 4-0 Proposed Final, 1992:IV-6).

Military Departments. The Military Departments are the Department of the Air Force, Department of the Army, and the Department of the Navy. The Department of the Navy includes the U.S. Navy and U.S. Marine Corps (DOD Dir 5100.1, 1987:2). The Services "...recruit, organize, train, and equip interoperable forces for assignment to unified and specified combatant commands" (Magness, 1991:1-7). Military Departments remain responsible for logistics and administration support of forces assigned or attached to the combatant commands (Magness, 1991:2-21).

Component Commands. From the Specified/Unified Commander's plan, the Services "Recommend to the JCS the assignment and deployment of forces to Unified and Specified Combatant Commands..." (DOD Dir 5100.1, 1987:12). Once Service forces have been assigned to, or against a Specified/Unified Command or plan, the commander of those forces becomes the Component Commander. The Component Commander is responsible for "...determining their specific force requirements, supply requirements, ...and the recommended time phasing of these requirements" (JCS Pub 4-04, 1985:IV-24).

U.S. Air Force. The Military Department charged with providing airlift to the DOD is the U.S. Air Force. DOD Directive 5100.1 states that the U.S. Air Force will

> ...organize, train, equip, and provide forces for close air support and air logistics support to the Army and other forces, as directed, including airlift. (DOD Dir 5100.1, 1987:19) [emphasis added]

Within the U.S. Air Force, the organization tasked with providing strategic and tactical airlift is the Military Airlift Command (MAC).

MAC is responsible for "...aerial deployment, employment and redeployment of combat forces and their support equipment; logistical resupply of these forces..." (Military Airlift Command, 1990:28). Within MAC, the organization responsible for operating the Charleston APOE was the 437th Military Airlift Wing, a subordinate unit of the 21st Air Force (HQ MAC/TR msg, 232130 October 1990).

Material Managers. To support their deployed forces, Services rely upon Material Managers at both DOD level, and at the deployed unit's home station/base. Material Managers provide the material to fill deployed unit requisitions.

The Defense Logistics Agency (DLA) is the DOD level material manager. The DLA's "missions include: buying and distributing of common supplies such as food, clothing, fuel, medical, industrial, construction, electronics, and general commodities" (Defense Logistics Agency, 1990:20). The proposed final draft of JCS Pub 4-0 states that DLA provides "...world wide logistic support to the Military Departments and the combatant commands under conditions of peace and war" (Joint Pub 4-0 Proposed Final 1992:A-4).

The Army Material Command (AMC), and Air Force Logistics Command (AFLC) are the Service level material managers for the Army and Air Force respectively. The AMC "...is the principal wholesale supplier for Army managed

items" (Cook and others, 1988:2-1). Under the AMC are the Inventory Control Points (ICP) and the Logistics Control Activity (LCA).

ICP functions include

> ...requirements determination, procurement, receipt control, stock and issue control, inventory analysis, budgeting, financial store accounting, performance measurement, and determination of excesses. (Cook and others, 1988:5-2)

Each ICP is responsible for a percentage of AMC managed items (Cook and others, 1988:2-7).

The LCA is located at the Presidio of San Francisco. It tracks requisitions as they process through the pipeline. The LCA also "...functions as the Army's airlift clearance authority, controlling all Army shipments into the Military Airlift Command (MAC) system" (Cook and others, 1988:2-1).

The AFLC operates similar to the Army's AMC. The AFLC

> ...operates five Air Logistics Centers in the CONUS. These ALCs control depot operations within their geographic areas and are worldwide managers for specific commodity classes". (Cook and others, 1988:3-2)

Under the AFLC is the Shipper Service Control Office (SSCO). The SSCO provides the same function as the LCA, by controlling the clearance of Air Force shipments into the MAC airlift system (HQ AFLC/DSS msg, 211909Z November 1990). The SSCO is located at Wright-Patterson Air Force Base, Ohio.

Air Clearance Authorities. A military "...shipper must clear all cargo shipped by Government controlled cargo air systems; i.e., MAC, LOGAIR, and QUICKTRANS" (DOD Dir

4500.32, 1991:2-B-22). Clearing cargo is the mission of the Service Air Clearance Authorities (ACAs). They control the flow of export cargo into the aerial port while ensuring its eligibility for MAC channel airlift (Larberg, 1992:25).

Clearance by the ACA is based on available airlift, terminal backlogs, and forecasted requirements. If cargo flow is slowed, the ACA works with the aerial port to control the backlog, which in turn affects the ability to bring more cargo into the port. During war time, the ACA acts as the honest broker to control the system and prevent the free flow of cargo into the aerial port (Larberg, 1992:25).

ITO/TMO. The lowest level material manager is the Installation/Depot Transportation Officer, or Traffic Management Officer. ITO/TMOs are found at all military installations. The ITO/TMO is responsible for packing, preparing, and forwarding shipments from their respective locations to the appropriate air or surface port of embarkations. During Operation Desert Shield/Desert Storm, ITO/TMOs forwarded shipments to deployed units based on instructions received from their Service clearance agency (CMC/LFT msg, 260139Z October 1990; HQDA msg, 291035Z October 1990; AFLC/DSS msg, 211909Z November 1990).

Recap. As stated in the overview, message traffic identified the majority of these key players. DOD publications and directives were used to identify the rest.

Telephone and personal interviews with members of these organizations confirmed their status as key players.

Operation Desert Shield/Desert Storm literature reviewed to this point indicates that these organizations were performing tasks according to their regulatory responsibilities. How well or poorly they were accomplished the task is not the issue at this point.

Desert Express Pipeline. The successful interaction of the agencies identified above is graphically represented in the Desert Express pipeline shown in Figure 4. The figure is appropriate for both Air Force and Army as it is based on Major Thalheim's research, DOD directives and publications, Operation Desert Shield/Desert Storm message traffic, and after action reviews.

Major Thalheim's research provides a detailed written description of how Air Force requisitions were processed through this pipeline, and is not repeated here. The successes and failures of the pipeline were addressed earlier. It is useful to reiterate that the key problems within the pipeline were shipment clearance control and documentation which led to Desert Express APOE backlogs. In the larger picture, however, the pipeline "system" successfully performed its mission (Tow, 1991:48).

Summary. The review of the appropriate DOD directives and publications concerning DOD agencies and responsibilities proved frustrating. Many publications are in various stages of revision. For example, the entire JCS

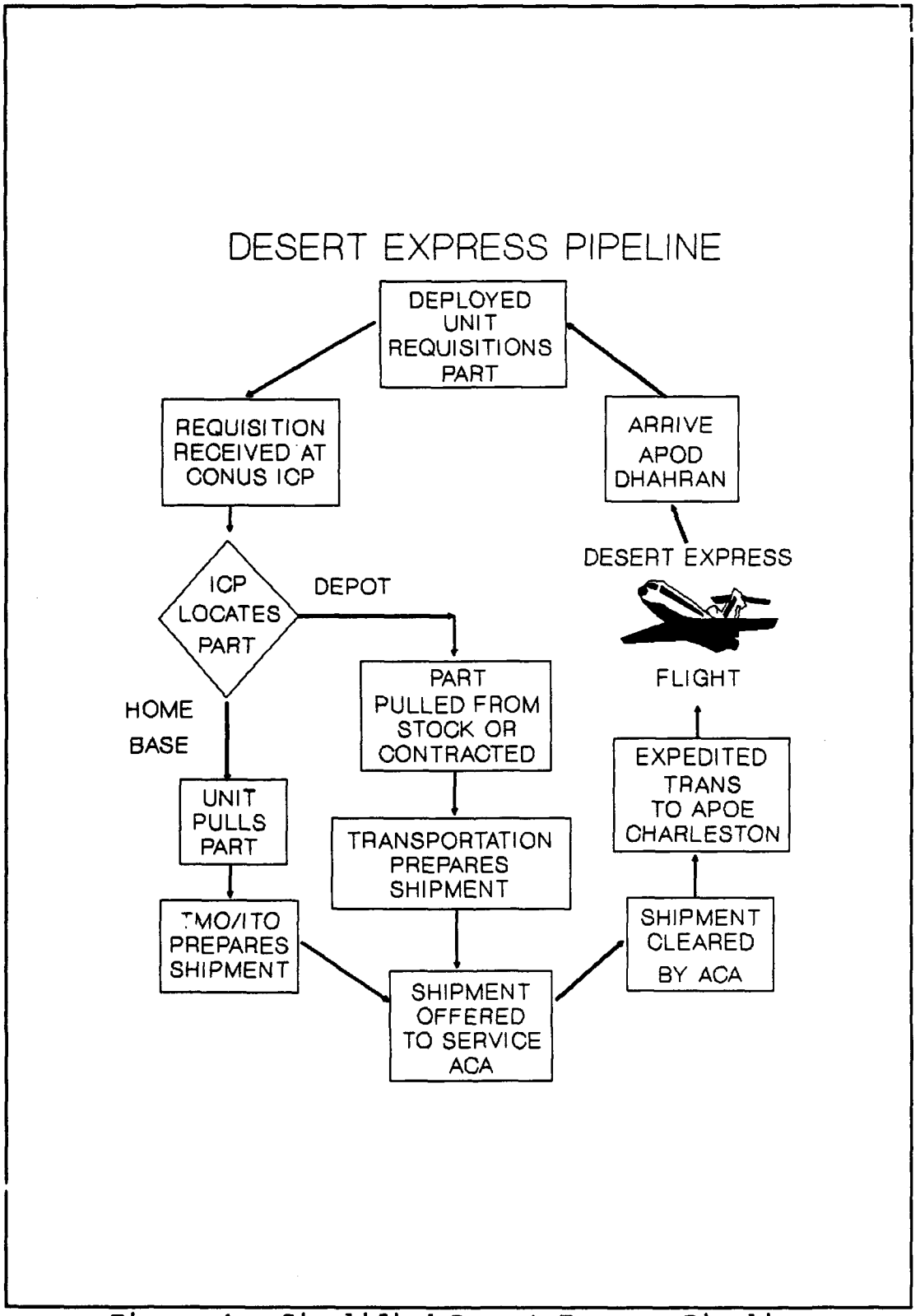

Figure 4. Simplified Desert Express Pipeline

4-Series (Logistics) publications are in revision, as the citing of the Joint Pub 4-0 as a "Proposed Final" indicates. Further:

> Joint Pub 4-01 'Log Policy & Guidance' has been deleted. Joint Pub 4-04 'Mobility Systems' will be renumbered as Joint Pub 4-01 and then retitled 'Defense Transportation Systems' when it under goes revision beginning in September 1991. (Joint Publication System Chart, 8 March 1991)

It follows that the myriad of Service and other DOD agency publications based on the Joint Series Publications either are, or soon will be, in revision as well.

The key players addressed in this section did exist and did participate in Desert Express as cited. What future Desert Express operations will look like and who the key players will be can only be supposed.

Lessons Learned and Future Implications

Sources of Desert Express lessons learned included message traffic, after action reviews, articles in both military and civilian literature, and personal interviews. Major Stephen Hagel, Former Chief Policies and Procedures Division, Directorate of Logistic Plans, Air Force Logistics Management Center, wrote his organization's Operation Desert Shield/Desert Storm lessons learned summary. He made a comment echoed here: "Keep in mind that we are reporting the information received, not our opinion of the validity of the data" (Hagel, 1992:1).

Positive Lessons. Lesson number one is that Desert Express was successful. It accomplished its mission to

expedite high priority cargo movement to the AOR. In a message to U.S. Transportation Command (USTRANSCOM), U.S. Central Air Force Command's rear detachment stated "Desert Express has been extremely successful. It has substantially reduced pipeline time for MICAPs and other critical items identified as 'show stoppers'" (USCENTAF REAR msg, 120308Z January 1991). In a similar message, TAC thanks subordinate units and MAC stating that, "Thanks to your hard work, Desert Express is getting the job done. 'Showstopper' MICAPs are moving faster than ever before" (HQ TAC/LGT msg, 231840Z November 1990).

The Air Force Logistic Management Center March 1992 report titled *Desert Shield/Desert Storm Supply Lessons Learned* cited one Desert Express related lesson.

> Title: Establishment of Desert/European Express #42554-6977.
>
> Observation: The large volumes of cargo led to backlogs at ports.
>
> Lesson: Slow or delayed logistics hinders mission support.
>
> Recommendation: Reduce bottlenecks at ports by expediting movement of cargo through the use of special 'must go' project codes during contingencies, and maximize airlift (Crimiel and others, 1992:7).

An earlier AFLMC article on supply lessons learned stated that:

> One lesson that clearly stood out was the need for dedicated airlift to move critical assets rapidly to the theater of operations. In this sense, Desert Express was a resounding success. (Daly, 1991:5)

Negative Lessons. Like any operation, Desert Express was not perfect. Major Hagel's review states:

> We mentioned the success of Desert Express, but it too had problems. Visibility of assets was poor and caused delays and even duplication of requisitions. (Hagel, 1992:4)

Numerous lesson dealt with the apparent abuse of the DOD Priority systems. Although not the subject of this research, it is necessary to establish the beliefs of system players and customers, right or wrong. One MAC subordinate unit submitted a Joint Universal Lessons Learned Systems (JULLS) report titled "Abuse of the DOD priority System." The discussion section said:

> Desert Express was only necessary because of the abuse of the DOD priority system. For example, WRSK replenishment traveled as MAC MICAP [NMCS] and AAFES resupply traveled as '999'. (JULLS No 42167-69501, 5 April 1991)

The lesson learned was:

> Proper use of the DOD priority system must be emphasized to preclude inundating the aerial ports with incorrectly prioritized cargo. Users frequently abused the system. (JULLS No 42167-69501, 5 April 1991)

As late as January 25th, Headquarters, U.S. Air Force told its ACA, the SSCO, that uncleared and ineligible cargo is arriving at Charleston APOE for movement on Desert Express (HQ USAF/LEYT msg, 251300Z January 1991). A related USTRANSCOM lesson learned observed that the Services needed to:

> Establish better control/discipline at the Air Clearance Authorities (ACAs) for the services. Early on it was apparent that ACAs had no concept of how to clear cargo, prioritize it, or challenge it when airlift became constrained. Desert Express procedures

> passed to the Services were slow in being passed to the ACAs, nor were ACAs proficient in their understanding months later. (JULLS No. 61942-8556, 19 June 1991)

In February, Headquarters, 21st Air Force, asked that the "CENTCOM/J4 become directly involved in validating all project code 9AU show stopper requisition/requirements/ support requests generated from the AOR" (HQ 21AF/TR msg, 172230Z January 1991). They stated that the increased tempo of operations led to an increased demand for "show stopper" material requested by CENTCOM, and the services were still unable to discipline the priority system (HQ 21AF/TR msg, 172230Z January 1991).

A related Headquarters, U.S. Air Force lesson learned reported:

> Desert Shield/Desert Storm revalidated the need for component commanders to have liaison at key nodes (e.g., water and aerial ports) in the transportation system to articulate service priorities. (HQ USAF White Paper, 1991:14)

These lessons echo many of the good and bad points raised in the earlier discussion of the Desert Express pipeline.

Proposed or Effected Changes. Some changes affecting the military airlift system have already been proposed or effected. In reference to comments on Desert Express' success, USTRANSCOM included a direct reference to Desert Express in the current draft of JCS Pub 4-01. The paragraph is found under the heading - "Special Strategic Support Missions"

> MAC provides for this type of mission during contingency operations. It generates a daily flight dedicated to high priority/critical cargo without

> regard for efficiency factors. The purpose is to make available the opportunity for rapid response to urgent requirements from deployed forces. A prime example is the so-called 'Desert Express' missions generated during Operation Desert Shield. (Joint Pub 4-01 Draft, undated:II-13)

A MILSTAMP change took effect October 11, 1991. The change added a new signal to the existing list of Transportation Priority One (TP-1) expedited handling signals.

> A TP-1 or TP-2 shipment with '777' entered in the RDD field requires expedited transportation processing in order of precedence following '999,' NMCS, and '555' items with the same UMMIPS priority designator. (DOD Dir 4500.32R, 1991:2-B-3)

The revision of the JCS 4-Series publications has already been mentioned, other changes may not yet be visible. In addition, the reorganization of the Air Force's Logistics Command and Military Airlift Command will also impact operating policies and procedures.

Implications for Future Operations. Although many lessons learned are still being developed, there are at least two schools of thought on what should be the next step for "Desert Express" type operations. One view, held by Colonel John Quirk, MAC Chief of Aerial Port Operations (XON), calls for institutionalizing an express airlift operation at all levels of DOD. His view favors pro-active rather than reactive customer service (Quirk, 1991).

Lieutenant Colonel Miller, already cited in Chapter I, agrees that an express system must exist before a conflict. His thought is restated here:

> ...airlift will always be a scarce resource. Within a theater this means that a fast, responsive system for requesting airlift, evaluating airlift requests, prioritizing airlift allocations, and executing airlift missions must be planned for, in existence, and well trained before a conflict. (Miller, 1988:433)

This opinion is echoed in the USAF White Paper cited previously. It states that "Desert Express was a success," and recommends that DOD "Institutionalize the Desert Express concept as a 'card in our deck' which MAC may or may not play, depending on the scenario" (HQ USAF White Paper, 1991:10). The questions raised are in what regulation, at what level, and who is the responsible DOD agency for writing the changes (Quirk, 1991)?

Another view put forth is that an express system has a place in contingency scenarios but does not need to be formally included in DOD regulation or doctrine. The trade-off between efficiency (e.g., cost) of the operation and its effectiveness, and exactly when express operations should begin and end, can only be answered case by case (Engel, 1991).

Conclusion

The purpose of the literature review was to provide sufficient information to answer Investigative Questions One, Two, and Three. These questions asked:

1. What organizations were involved and what were their Desert Express roles?

2. What are the critical Desert Express lessons learned?

3. What changes have already been made or suggested as a result of Desert Express?

The literature provided an insight into answers by highlighting past transportation problems and solutions. Desert Express indicates that we have either learned little from the past, or have purposely chosen to ignore it.

Constrained airlift assets again combined with high volumes of critical cargo continue to backlog APOEs. Existing DOD procedures for moving high priority allowed this situation to perpetuate. The addition of expedited handling signal "777" provided one more way to expedite cargo already coded TP-1.

The message traffic between the key players explained which procedures broke down, and how the creation of Desert Express overcame some, but not all, problems. Existing lessons learned suggest that although Desert Express was successful overall, movement control problems existed throughout its life.

The differing thoughts on the relevance of Desert Express to future DOD doctrine and operations raise many issues and questions represented by Investigative Questions Three and Four. The attempt to reach a consensus of opinion on these two questions provided the foundation and scope for development of the Delphi research methodology of Chapter III.

III. Methodology

Overview

There have been a myriad of after action reviews by the many different user agencies since the end of Desert Express. However, there has been little research conducted on where and in what form lessons learned should be formalized into Airlift Doctrine and regulation. As the operator of Desert Express, the Military Airlift Command sponsored this research to address the issue.

The research design encompassed three major phases. The first phase consisted of a literature search. Specifically, a review of Major Thomas Thalheim's 1991 AFIT thesis *Desert Express: An Analysis on Improved Customer Service* provided the starting point for evaluation of Desert Express. Phase two consisted of forming a baseline consensus among experts on where and in what form express airlift procedures should be formalized. This was accomplished through a two-step application of the Delphi technique. In phase three, a comparison of Delphi results to applicable courses of action was conducted. Findings resulted in recommendations that were addressed back to the sponsoring command. This process provided the data needed to answer the research questions formulated in Chapter I.

Literature Review

The literature review performed in Chapter II concluded that Desert Express was a unique collection of regulatory and non-regulatory procedures created to accomplish a mission. The review further established that there are differing opinions among the key participants on how to formalize lessons learned. These characteristics point to an application of the Delphi technique as a methodology for reaching a consensus.

> The Delphi technique should be described as an elegant method for developing a consensus; it is a polling method employed for the systematic solicitation of expert opinion. (Cetron, 1969:92)

Selection of Research Technique.

The Delphi technique was selected to ease formation of a baseline consensus among experts as to where (Airlift doctrine and/or regulations) and how lessons learned from Desert Express should be formalized. The Delphi technique was suitable for this research because it allowed for the "participation of physically dispersed experts while maintaining a high degree of convergence" (Preble, 1983:76). This data collection technique allows may be clouded by personal biases of the respondents. Removing all bias was critical for establishing validity.

> Bias is the distortion of responses in one direction. Ways that we can bias responses include the use of superlatives, slang expressions, and fad words. These are best excluded unless they are critical to the objective of the question. (Emory and Cooper, 1991:364)

> Validity is the extent to which differences found with a measuring tool reflect true differences among those being tested. The difficulty in meeting this test is that usually one does not know what the true differences are; if one did, one would not do the measuring in the first place. (Emory and Cooper, 1991:180)

The underlying belief of Delphi is that the consensus among the experts results in a better decision after several rounds of anonymous group judgement (Borg and Gall, 1983:413). However, while continuing the procedure for several rounds is possible, studies have shown essentially no significant change after the second round (Gibson and others, 1991:589). For this reason, the Delphi study associated with this research was limited to two iterations.

Delphi Method. The Delphi technique employs a questionnaire for organizing and sharing opinion through group feedback (Bardecki, 1984:281). The technique is usually accomplished through an iterative process in which experts are polled for their opinions concerning the topic of research.

> This technique, although it employs questionnaires, is much different from the typical questionnaire survey. It was developed by the RAND Corporation as a method of predicting future defense needs but it can be used whenever a consensus is needed from persons who are knowledgeable about a particular subject. (Borg and Gall, 1983:413)

The Delphi technique, as any other methodology, begins with the problem definition. Having defined the research problem, the first step in a typical Delphi study is to prepare a set of questions or statements based on the defined research questions, interviews, and literature

review. Second, experts in the subject are selected and confirmed as panel members to answer the questions. Confirmation of each selected respondent is done by oral or written correspondence. The distributed questionnaires require thorough, accurate, and timely responses. Survey results from the initial questionnaire are analyzed to determine if a consensus exists (VanGundy, 1988:324-325).

Based on responses to the initial questionnaire, a revised questionnaire is then circulated (Borg and Gall, 1983:414). If ratings were obtained on the initial questionnaire, the median score along with any respondent comments are analyzed and provided in the second questionnaire. This questionnaire, containing the non-consensus items and all opinion data from the previous round, is then submitted to the same respondents, who are asked to compare their original ratings with the median score and to revise their evaluations as they deem necessary (Borg and Gall, 1983:414).

> In effect, the Delphi technique uses mailed questionnaires to engage the respondents in an anonymous debate in order to arrive at consensus on issues or on predictions of future events. (Borg and Gall, 1983:414)

This procedure is repeated in an effort to obtain a well-thought-out consensus among the experts. Figure 5 illustrates the Delphi technique in closer detail.

In sum, the Delphi technique is a method employed for the solicitation, self-review, and aggregation of experts' opinions about matters that are uncertain through an

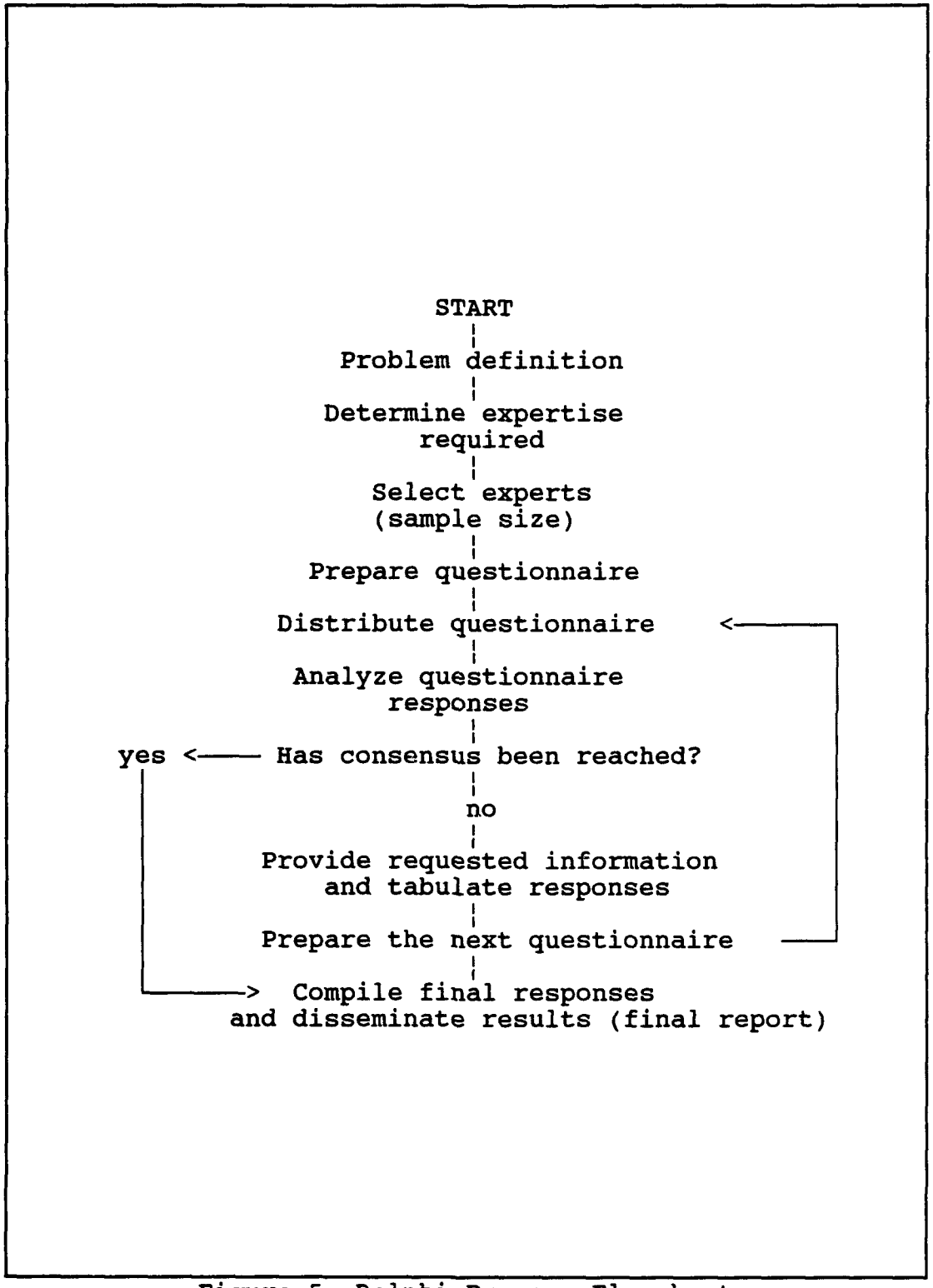

Figure 5. Delphi Process Flowchart

(Riggs, 1983:90)

iterative process (Arnfield, 1969:163). The Delphi technique is not used to produce a forecast in the traditional sense. Rather, the Delphi technique is used to arrive at possible courses of action.

> The aim of the Delphi technique is to explore courses of action; and to explicate them to the extent that their feasibility can be at least grossly estimated, and their operational consequences at least generally understood. (Arnfield, 1969:163)

It should be noted that while consensus is of central interest in using Delphi, care must be taken for it to be genuine and not to derive it artificially (Arnfield, 1969:162).

Advantages of Delphi. The key advantage of the Delphi method is its emphasis on developing expert consensus about a subject through an anonymous series of mailed questionnaires. This allows respondents to state their beliefs free of perceived retribution, or group dominance by certain individuals. The Delphi process gives respondents time to reflect on their responses and possibly change their minds. Table 11 lists the advantages of the Delphi technique.

> The creators of the Delphi technique (Helmer and Dalkey) stressed that anonymity of responses be preserved throughout the process. The intent is to eliminate the influence of coercion, unwillingness to abandon publicly expressed opinions, and the 'bandwagon' effect of majority opinion. (Arnfield, 1969:162-163)

Dalkey and his associates developed the Delphi technique to eliminate negative effects related to the use of interacting groups for decision making (Riggs, 1983:89).

TABLE 11

ADVANTAGES OF THE DELPHI TECHNIQUE

1. Provides a convenient way to involve persons who might be geographically distant from one another.
2. Permits anonymous responding and minimizes group conformity pressures.
3. Eliminates the sometimes harmful psychological barriers often found in groups; prevents individual domination and avoids any form of disruptive interpersonal conflicts.
4. Uses the idea evaluation stage in addition to idea generation.
5. Makes possible the generation of a large number of ideas.
6. Written responses force respondents to seriously consider their ideas, allowing for greater crystallization of thought. Thus, higher-quality ideas often emerge.
7. Keeps attention focused directly on the problem (i.e., is task centered).
8. Each participant has an equal opportunity to contribute; all ideas are given equal consideration.
9. Produces more accurate estimates of predictions than face-to-face confrontations.

(VanGundy, 1988:327)

Some of these negative effects influencing the performance of interacting groups were factors such as conformity, narrow focus, expense, and dominance of certain personalities. The Delphi process aided in overcoming the negative effects of group interaction decision making for

the research and provided features such as structured questionnaires, clear communication, anonymity, and expert opinion feedback to respondents.

Disadvantages of Delphi. The major disadvantages associated with the Delphi technique involve length of time required to conduct the surveys and the selection of experts. Delphi studies are very time consuming depending on the number of iterations being performed and the amount of opinion data that must be compiled and disseminated to the respondents on each iteration.

The population from which to choose experts can be defined relatively easily, but the actual respondent selection process is difficult. Researchers must get enough experts on the topic area to ensure the reliability of all findings. The cohesiveness and individual qualifications of the Delphi respondents play an important role in the final outcome of the research. The value of the Delphi process required examining the characteristics of the Delphi respondents.

Delphi Respondent Characteristics. The characteristics of the individuals selected to receive questionnaires will determine the quality of the final product (VanGundy, 1988:325).

In a discussion of respondent selection Delbecq and others stated

> ...that participants be selected on the basis of their (a) sense of personal involvement in the problem, (b) possession of relevant information, (c) motivation to

> spend time on the Delphi process, and (d) perception of the value of information they will obtain from the other participants. (Delbecq and others, 1975:183)

Another important aspect of the respondent group is that each of the participants need not be well qualified in exactly the same area. Rather, each can be qualified in only subparts of the area of concern. In this way the entire research area is covered and information can be gathered from several experts with varying professional backgrounds (Wheelwright and Makridakis, 1980:280).

> For several decades organizations have attempted to amass the talents of groups of individuals in an effort to combine their individual skills and improve decision making. Group decisions are necessary when the scope of the problem is such that no one individual has sufficient expertise and knowledge to effect a solution. (Riggs, 1983:89)

Population Definition. The population of the Delphi survey respondents comprised individuals who were directly involved with creating, operating, providing input to, or receiving output from the Desert Express system for a majority of its life cycle. Appendix A lists the thirteen various Commands/Organizations and office symbols associated with the development, administration, and operation of Desert Express.

Delphi Respondents. An initial list of possible Delphi respondents was compiled during the literature review process. Names were taken from Desert Express messages, articles, and after action reports. Personal interviews were also held with senior transportation officers assigned to MAC and USTRANSCOM during Operation Desert Shield/Storm.

The officers interviewed were involved with the creation and subsequent monitoring of Desert Express. An iterative phone call and interview process, starting with the initial list of possible respondents, led to the final selection of Delphi respondents.

The first round of Delphi questionnaires was sent to the twenty-four Desert Express experts selected from the population mentioned above. Nineteen experts (79% response rate) responded. Table 12 lists the thirteen Commands/Organizations and number of participants from each that comprised the initial Delphi survey group.

TABLE 12

DELPHI PARTICIPANTS BY COMMAND/ORGANIZATION

	Command/Organization	Total
1.	Department of Defense Joint Chiefs of Staff (JCS)	3
2.	Headquarters, Department of the Air Force (HQAF)	2
3.	U.S. Transportation Command (USTRANSCOM)	2
4.	Military Airlift Command (MAC)	4
5.	Headquarters, Air Force Logistics Command (AFLC)	3
6.	Headquarters, U.S. Central Command (CENTCOM)	2
7.	Department of Defense Logistics Agency (DLA)	1
8.	Headquarters, 21st Air Force (21AF)	1
9.	U.S. Army Material Command (AMC)	1
10.	Headquarters, Department of the Army (HQDA)	1
11.	Tactical Air Command (TAC)	1
12.	Army Air Clearance Authority (ACA)	1
13.	437th Military Airlift Wing (MAW), Charleston AFB	2

Delphi Survey Construction. Delphi survey questions were developed from the data collected in the literature review. The round one Delphi survey, found in Appendix B,

contained questions pertaining to the creation, operation, and implications of Desert Express. The survey consisted of two multiple choice questions and twenty-seven scaled questions (Likert), with space provided after each, to allow the experts the opportunity to provide written responses where they deemed necessary.

Likert Scale. In using the Likert scale, the research subject was evaluated on the basis of how well it discriminated between those respondents whose score was low (agree) for any one question and those respondents whose score was high (disagree). In a discussion on the use of the Likert scale Emory and Cooper asserted

> ...with this scale the respondent is asked to respond to each statement in terms of five degrees of agreement. The numbers indicate the value to be assigned to each possible answer with 1 indicating the most favorable and five the most unfavorable. If the respondents score low, it is likely they hold a favorable attitude; likewise, if the score is high, one concludes that there is a unfavorable attitude among respondents. The interpretation of scores nearer the middle of the scale is less clear if the objective is to describe the respondents in any absolute sense.
>
> Likert scales are most useful when we expect to conduct an experiment, undertake a program of change or improvement, and the like. We can use the scales to measure attitudes before and after the experiment, or to judge whether our efforts have had the desired effects. Furthermore, if we wish to correlate scores on the scale to other measures, it can also be done without concern for the absolute value of what is "favorable" and what is "unfavorable". (Emory and Cooper, 1991:220)

Figure 6 shows the Likert scale used in the research survey. The numbers indicate the value to be assigned to each possible answer ranging from "1" indicating strongly agree and "5" indicates strongly disagree.

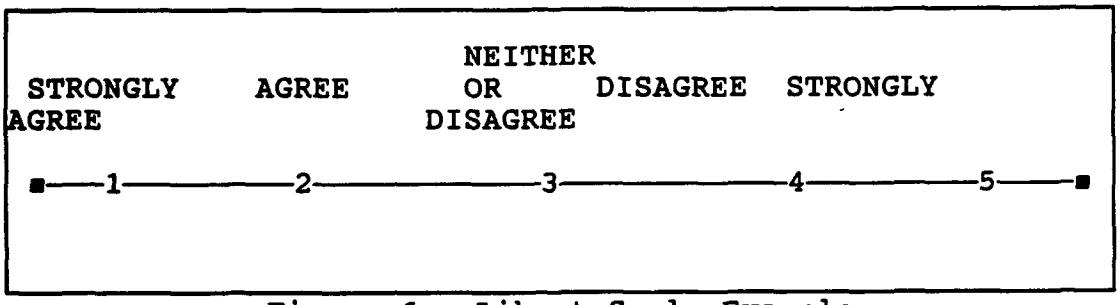

Figure 6. Likert Scale Example

Survey Review. The survey was reviewed and validated by; Colonel J. Quirk, XON/MAC, the thesis sponsor; Colonel T. Sledge, AFLC Director of Transportation; and Major J. Ford, Director of Transportation Management, School of Systems and Logistics, Air Force Institute of Technology. The responses from the review process aided in clarifying questions and removing any potential biases. Through this process a completed survey was generated and the round one Delphi survey conducted.

Conduct of Survey

Round One Delphi Survey. In round one, the survey was sent to the selected Delphi panel members along with a cover letter explaining the purpose of this research. The full round one survey is included in Appendix B. The Delphi panel was composed of the individuals listed in Appendix A. Of the original twenty-four panel members, nineteen (79%) completed and returned the survey and composed the panel for round two of the survey.

Results from round one were tabulated using the personal computer spreadsheet Quattro Pro. The mean responses were computed for each Likert scale question. Responses were also examined for 60 percent or greater agreement, and consensus rulings were made. Also, all comments made by the round one respondents were compiled and are given in Appendix C.

Round Two Delphi Survey. The round two Delphi survey was based on round one results. For those questions where the 60 percent consensus was reached in round one the statement "No Response Required" was placed on top of the question in the round two survey. However, consensus item feedback to the Delphi experts showed the number of participants who agreed or disagreed with each Likert scale question already having consensus.

Non-consensus items therefore formed the basis for the round two questions. The round two survey used the same questions from round one along with all respondent feedback, mean scores, and the number of panel members falling in each of the six possible categories. The comments from round one were placed just after the question but before the Likert scale. This placement strategy was used to insure the respondents read and considered the comments before answering the round two questions. Respondents were again given the opportunity to express their opinions about the question along with any opinions they may have had about the

comments provided by the other Delphi experts. The complete round two survey is located in Appendix D.

The goal of round two was to have Delphi respondents use the feedback of other respondents and the mean score to give due weight to questions they may have dismissed as unimportant in the first round.

> Both the inquiry into the reasons and subsequent feedback of the reasons adduced by others may serve to stimulate the experts into taking into due account considerations they might through inadvertence have neglected on first thought. (Cetron, 1969:92)

Telephone follow-ups were conducted two weeks after the second round surveys were mailed. Three individuals failed to respond and one individual did not even receive the survey because he retired from the military. The response rate for round two of the Delphi survey was 79% (15 of 19) for those participants from the first round and 63% (15 of 24) for the original survey respondent group. Only round one Delphi respondents were mailed a round two survey questionnaire. A complete listing of round two comments is given in Appendix E.

Data Analysis Procedures. Using the Delphi method, one repeats the iterative process until consensus is achieved or the problem is sufficiently answered (VanGundy, 1988:324). Points agreed to by a majority of respondents are likely valid. The same conclusion applies for points invalidated by a majority consensus. Borderline or gray area cases require more concise questions and answers to determine

their validity. For the purposes of this study, consensus was defined as a score of 60 percent or greater agreement.

The sixty percent or greater requirement represented a more stringent level than the normal majority rule, but for this research it represented a reasonable standard to attain using the selected experts. Mean responses were also computed for all the scaled questions by adding the Likert number responses (i.e. 1, 2, 3, 4, or 5) and dividing this total by the number of respondents.

For all Likert scale questions the first assessment was to measure if the 60 percent consensus criteria was attained for one of the six possible response categories (i.e., strongly agree, agree, neither agree or disagree, disagree, strongly disagree, or does not apply). If not, Likert scale responses of "strongly agree (1)/agree (2)" and "disagree (4)/strongly disagree (5)" were grouped together after round two in order to determine whether consensus was reached. The two multiple choice questions were also subject to the 60 percent consensus rule for the purpose of this study.

Conclusion

The Military Airlift Command recognized the need to determine what regulatory changes are required to establish a permanent express airlift capability. A complete literature review of current doctrine, regulations, and lessons learned from Desert Express provided initial information. Application of the Delphi technique was used

to gain expert consensus on improvements required prior to institutionalization of express airlift procedures. Findings and analysis from the Literature Review and Delphi process are contained in Chapter IV.

IV. Findings and Analysis

Introduction

This chapter evaluates the results of the information presented in Chapter II, the Literature Review, and the results of the Delphi Survey described in Chapter III to answer the following investigative questions:

1. What organizations were involved and what were their Desert Express roles?

2. What are the critical Desert Express lessons learned?

3. What changes have already been made or suggested as a result of Desert Express?

4. What changes should be made before formalizing Desert Express?

5. Where should Desert Express procedures be formalized?

The findings based on the literature are presented first. The Delphi results were used to support or refute the literature.

When applying the Delphi results, the criteria established in Chapter III, Methodology, were used. The first assessment measured if the 60 percent consensus criteria was attained for one of the six possible response categories (strongly agree, agree, neither agree or disagree, disagree, strongly disagree, or does not apply). If not, Likert scale responses of "strongly agree/agree" and

"disagree/strongly disagree" were grouped together after round two in order to determine whether consensus was reached.

Investigative Question #1: What organizations were involved and what were their Desert Express roles?

The Department of Defense, though the JCS J-4: allocated strategic airlift to Operation Desert Shield; established Project Codes 9BU and later 9AU; and, orchestrated early deployments in concert with the two unified commands involved (U.S. Central Command and U.S. Transportation Command).

CINC, USCENTCOM, ensured the linkage of intra-theater distribution systems to arriving Desert Express flights. Through his subordinate Service Component Commanders, he requisitioned needed materials and established the "show-stopper" rules used to enter shipments into the Desert Express pipeline.

CINC, USTRANSCOM, suggested and then created the Desert Express system. Through his air transportation component command, Military Airlift Command, he established the routes, aerial port of embarkation, and procedures for Desert Express. Most important, he set the Service space allocations for the one per day Desert Express flight.

Within MAC, the 21st Air Force, and its subordinate 437th Military Airlift Wing, operated the APOE and controlled the daily Desert Express loading and flight

operations. The 437th's mission included receiving, segregating, documenting, palletizing, and loading Desert Express cargo.

Within the Air Force and Army, the Air Clearance Authorities, were the link between material managers and the Desert Express pipeline. The ACAs controlled the amount of cargo in the pipeline by receiving and clearing requests from the material mangers requesting Desert Express shipment. The ACAs were limited by the express airlift space and weight allocations given by USTRANSCOM. The ACAs, in concert with the shipper, were also responsible for diverting all requests in excess of the individual service allotted allocation away form Desert Express to ensure the APOE did not become backlogged.

The Defense Logistics Agency and service material managers received the requisitions from the deployed forces, found the item, and offered the shipment to its Service ACA. Once cleared, the material manager forwarded the shipment to arrive at the APOE by 1030L hours the following morning. The material managers were prohibited from forwarding uncleared shipments to the APOE.

The Operation Desert Shield/Desert Storm literature indicated that these organizations were performing tasks according to their regulatory responsibilities. How well or poorly they accomplished their tasks is addressed in later investigative questions.

Delphi questions 20, 21, and 22 dealt with organization manpower levels, increased workload, and whether or not each organization followed existing policy to make Desert Express a success. Sixty-nine percent of the Delphi experts disagreed with the negative premise that their organization's manning was inadequate to handle the added Desert Express tasks. Manning levels were not seen as an issue.

Sixty-two percent of the Delphi experts disagreed that their units adhered to pre-Desert Express standard operation procedures throughout Desert Express' life cycle (plan, create, operate). This result confirms the literature review finding that existing airlift procedures were not transferrable to Desert Express. One Delphi expert commented that, "Most standards were revised to make DE [Desert Express] a viable system."

The Literature Review findings also indicated that organizations performed their missions. How could both findings be true? Restating a part of MAC's mission shows MAC is responsible for "...aerial deployment, employment and redeployment of combat forces and their support equipment; logistical resupply of these forces..." (Military Airlift Command, 1990:28). Because this mission statements is general in nature, it is plausible that MAC was accomplishing this general "mission" without following an existing regulatory standard operating procedure.

Desert Express was, in fact, such an example. The combined findings show that while each organization performed its regulatory mission, they had to throw the rule book away and use ad hoc procedures to make Desert Express happen.

The Delphi experts did not reach a consensus on question 22. This question asked if Desert Express increased the individual tasks required of the respondents position by regulation. Delphi expert comments did tend to indicate that overall workload increased, but not necessarily the number of new tasks required.

Summary. The question of which organizations were involved is easily established in the Literature Review. The literature identified each organization and their Desert Express responsibilities. The success of Desert Express and subsequent calls for its institutionalization indicate that the organizational structure of Desert Express was generally adequate. Subsequent analysis will address the adequacy of inter-organizational relationships.

Investigative Question #2: What past lessons were re-learned from Desert Express?

The findings revealed two types of lessons: those submitted as formal reports; and those extrapolated from the literature, Delphi consensus, and Delphi experts' written comments. This section first presents the formal lessons

and any supporting or refuting extrapolated evidence. The purely extrapolated lessons are then presented.

Lesson One. The AFLMC's report and the Department of the Air Force White Paper agree on the need for dedicated express airlift to move critical assets. This re-learned lesson is supported by extrapolated findings as well.

General Johnson's thoughts on institutionalizing the process carries the weight of the senior military transporter, and commander of the military's airlift arm. Customers also hailed Desert Express, including the CINCENT, the Tactical Air Command, CENTAF, and the Department of the Army. All wrote messages proclaiming Desert Expresses success.

The Delphi experts supported this view with first round 73 percent consensus of highly agree on question 6 and a 60 percent consensus of agree on question 14. These questions asked if express procedures should be formalized and if cargo backlogs are inevitable during contingencies respectively.

These findings combine with the long list of historical precedents and the regulatory proliferation of high priority cargo. The resultant revalidated finding is lesson number one: an express airlift will always be required.

Lesson Two. The second formal lesson was also found in the Air Force White Paper. It stated the need for liaison officers from the supported force at key transportation nodes to "articulate service priorities." The 21st Air

Force, pre-dated this lesson by asking that the "CENTCOM/J4 become directly involved in validating all project code 9AU show stopper requisition/requirements/support requests generated from the AOR" (HQ 21AF/TR msg, 172230Z January 1991). While not asking for a liaison, it reflects the need to get the supported commander back in the priority determination cycle.

In response to question 18, 73 percent of the Delphi experts agreed or strongly agreed that a joint air cargo clearance teams consisting of members from the transportation component command, supporting commands, and supported command are required at each APOE for command, control, and diversion actions.

Delphi experts written comments did not suggest agreement that all of the organizations mentioned should be represented in the team. However, all respondents did agree to the inclusion of a Supported CINC representative for the team. Even the three dissenting experts all wrote that a team would be required "if system discipline is not maintained," or if the ACA does not know what the CINC's priorities are and act accordingly.

Lesson Three. The third lesson revalidated by Desert Express is that airlift backlogs are inevitable. The literature established that when constrained airlift assets are combined with large quantities of air eligible cargo, airlift channel backlogs occur. This was the case in WW II, Korea, Vietnam, and Operation Desert Shield/Desert Storm.

The reasons for this combination were threefold: 1) shortfall of airlift assets, 2) the lack of planning, and 3) lack of control. These three issues arose again during Operation Desert Shield/Desert Storm.

The shortfall of assets occurred even with the assignment of "95 percent of MAC's operable C-5s and 90 percent of the operable C-141s;" and the 100 plus civil air volunteer missions scheduled to fly the pipeline in those first 10 days (Tow, 1991:48). The shortfall of assets is to be expected as airlift was never intended to carry everything (Turner, 1985:235).

Questions 12 and 13 asked whether the use of CRAF and LOGAIR assets should have been considered to replace the already scarce C-141s used for Dessert Express. The Delphi experts were overwhelming in their disagreement with this idea. Written comments centered on perceived problems with controlling the civilian planes.

The lack of planning occurred because no OPLAN existed for the actual scenario as it occurred. The OPLAN for the closest scenario "...had not yet reached the stage where the Transportation Command would have prepared the detailed transportation plan" (GAO, 1992:5).

The lack of control was evidenced by cargo frustrated at APOEs for lack of documentation and identification (Crimel and others, 1992:7); the numerous methods for expediting cargo already coded at the highest priority; and, the air clearance problems at the ACA and Service levels.

This lack of planning and control led to the large quantities of air eligible cargo which collided with the limited airlift assets to produce backlogs and the requirement for Desert Express.

Questions 4 and 5 asked if the experts were fully aware of JCS project codes 9AU and 9BU. The assumption was that a non-awareness of these codes may have created control problems. The Delphi experts agreed or strongly agreed in both instances that they were fully aware of the JCS project codes. A lack of communication on this point did not result in the backlog problems.

In the near future, downsizing and fewer forward deployed forces will place "increased emphasis on strategic lift" (Johnson, 1991:58) thus ensuring that airlift assets will remain important. Deployment history and the understanding that airlift was never intended to carry everything indicate airlift assets will remain limited.

The Delphi experts support this view. A first round consensus of 60 percent agree (87% agree or strongly agree) on question 14 indicates the experts' belief that air cargo backlogs are an inevitable part of contingency operations. Their comments include: "In my career and all previous contingencies, requirements have always exceeded capability," and that backlogs "...to some degree are necessary for good cargo management 'high utilization'."

To address the short time frame of Desert Express, question 9 asked if the Gulf War had continued, would Desert

Express have become unnecessary as a result of a learning curve. The Delphi Experts reached a strongly disagree consensus. One expert commented "If anything it may have expanded."

Summary. As history has repeatedly pointed out: a shortfall of airlift assets combined with a lack of planning or control will lead to backlogged aerial ports. Operation Desert Shield events leading to Desert Express re-validated each of these points. The primary lessons learned were: 1) airlift backlogs are inevitable, 2) supported force liaisons are required at key transportation nodes, and 3) there is a need for a dedicated express airlift to move critical assets.

Investigative Question #3: What changes have already been made or suggested as a result of Desert Express?

The literature search found only one change made or proposed as a direct result of Desert Express. The change is a proposed paragraph in the new JCS Pub 4-01. This Pub will be titled *Defense Transportation Systems* when published. The paragraph, repeated here, makes provisions at the JCS level for future Desert Express type operations.

> MAC provides for this type of mission during contingency operations. It generates a daily flight dedicated to high priority/critical cargo without regard for efficiency factors. The purpose is to make available the opportunity for rapid response to urgent requirements from deployed forces. A prime example is the so-called 'Desert Express' missions generated during Operation Desert Shield. (Joint Pub 4-01 Draft, undated:II-13)

Delphi expert responses to question 10 which asked if Joint Operations Planning System unit sustainment must be integrated into MILSTAMP, indicate other changes are being worked. These include the integration of MILSTAMP and the JOPES systems.

The literature search included the Proposed Final Draft of JCS Pub 4-0. This publication will provide new JCS guidance for joint operations. In addition to this publication, the entire JCS-4 Series is in revision. This is only the tip of the iceberg. One comment in reference to question 10 stated that "...much more work is needed." It follows that the myriad of Service and other DOD agency publications based on the joint publications will be effected.

Summary. This research found just one change resulting from Operation Desert Shield/Desert Storm. As cited, however, many more changes are in the works.

Investigative Question #4: What improvements to the Desert Express system should be made before it is formalized?

This has proven to be a difficult question to answer. Even with expert input, no list can be all inclusive. It proved very difficult to get the panel of experts to agree on one set of improvements and on importance ranking, even after two iterations of the Delphi. Some changes, listed below, were direct suggestions. Most suggested

improvements, however, were extrapolated from the literature and supported or refuted with Delphi expert opinions.

Improvement One. Links between the Component Commands, Material Managers, and Airlift Control Agency must be strengthened. The services, through their service level material managers must insist on specific "showstopper" definitions from their service component command, pass these to both lower level material managers/shippers, and the ACAs, and then enforce the system.

The majority of negative message traffic from all sides dealt with air clearance problems. The ACAs claimed ITO/TMOs were bypassing them and forwarding shipments directly to Charleston (HQ TAC/LGT msg, 231840Z November 1990; HQ AFLC msg, 151700Z January 1991). The Army chided both their ACA and material managers at all levels for not challenging or controlling requests for Desert Express space (HQDA msg, 072244Z December 1990: HQDA msg, 291945 January 1991).

USTRANSCOM leveled a concrete lesson learned against control procedures in all participating organizations concerning Service/ACA procedures. The comment is key to the suggested improvement. It expresses a need to

> Establish better control/discipline at the Air Clearance Authorities (ACAs) for the services. Early on it was apparent that ACAs had no concept of how to do it, or challenge it when airlift became constrained. Desert Express procedures passed to the Services were slow in being passed to the ACAs, nor were ACAs proficient in their understanding months later. (JULLS No. 61942-8556, 19 June 1991)

The Delphi experts had definite opinions concerning air clearance procedures. Question 15 asked whether the ACAs knew the supported command's air shipment priorities, 13 percent of the respondents agreed while 67 percent disagreed or strongly disagreed. This result seconds the USTRANSCOM JULLS comment, and indicates that there is a general perception that the ACA process needs improvement.

Question 16 asked if stricter rules are required for challenging high priority shipments. Sixty percent disagreed or strongly disagreed. The written comments tended to state that rules exist, they just need to be enforced. In contrast, one comment stated enforcement was not always possible because "Without feedback from [the] AOR we cannot second guess what they [supported force] need. Message traffic to [the] AOR was minimized. Could not get challenge to the requisitioner."

MILSTAMP states that diversion cannot occur without requisitioner input. Therefore, the ACAs hands were tied when communication could not be effected to Saudi Arabia. The shipment had to be cleared in order to avoid frustrating critical shipments.

In response to this dilemma, question 17 asked if the ACAs require the authority to divert high priority cargo away from express channels. A consensus was not reached. Written comments were also split between yes and no. One key comment stated that the "Cinc's JTB [Joint Transportation Board] should be the major player in this."

Improvement Two. During Operation Desert Shield/Desert Storm, a theater JTB did not play a part in the air clearance process as evidenced by a lack of any mention in the literature. This fact lead to the second suggested improvement.

The Supported CINC must always designate authority to the Theater Joint Transportation Board as the single inbound point of contact for CONUS material managers and transportation providers. The joint board will aid the process by reducing confusion between key players concerning who allocates, prioritizes, and diverts shipments to the theater. This authority would lie with the JTB which receives priority direction from the Supported CINC.

The literature showed this solution was used in both Korea and Vietnam to "decided exactly what was to be moved, in what priority, and to whom" (Turner, 1985:231). Given the significant level of pain involved with controlling the air clearance system, this organization could have solved the problem. This is one instance where a past lesson was learned, institutionalized, but not used during Operation Desert Shield/Desert Storm.

Improvement Three. Further delineation of the responsibilities of the key transportation players in inter-theater airlift operations is required. One reason why the Theater Joint Transportation Board did not allocate Desert Express airlift is because each service had a set space on each Desert Express flight to use as they wished. A theater

board was not needed to allocate Desert Express airlift between Services.

While this policy let each Service decide what was "showstopper" for its operation, it cut the Supported CINC out of the decision loop. The Services were deciding, not the Theater Commander. Service space constraints dictated item movement rather than item criticality to the overall mission.

The 21st Air Force tried to get the CINC back in the loop. Their message requested that the supported CINC be directly involved in validating express system requisitions leaving the theater (HQ 21AF/TR msg, 172230Z January 1991).

Existing and proposed policy is confusing in cases where key player responsibilities meet or cross. *DOD Dir 5100.1* states the Services are responsible for supporting their deployed forces. JCS Pub 4-04 *Mobility Systems Policies, Procedures, and Considerations*, states the Supported CINC "...must use the lift capability allocated to meet competing needs for forces and resupply to sustain in-place and augmenting forces" (JCS Pub 4-04, 1985:IV-6). Lastly, USTRANSCOM has the mission

> ...to provide strategic air, land, and sea transportation to deploy, employ, and sustain military forces to meet national security objectives, in both time of peace and war. Other commanders coordinate their movement requirements and required delivery dates with USCINCTRANS, who with its Transportation Component Commands (TCCs) provide a complete movement system from origin to initial theater destination. (JCS Pub 4-0 Proposed Final, 1992:I-18)

These separate responsibilities appear very similar. Delphi questions 19, 24, 25, and 26, were asked to gain expert opinion on the further division of key player transportation responsibilities. Question 19 asked if USTRANSCOM required the authority to divert cargo. A 73 percent consensus of the Delphi experts strongly disagreed (87% disagree or strongly disagree) suggesting that USTRANSCOM is a provider only. The experts' comments supported this finding as well. One round two comment summed it up stating that "TRANSCOM must service the customers needs, not determine what they are."

Question 24 asked whether Desert Express policies and procedures were clearly identified. Sixty-seven percent of the Delphi experts agreed (73% agreed or strongly agreed). The written comments were less certain. One comment stated "They were clearly identified after an evolutionary period." This suggests some type of learning curve was present.

Another comment stated the procedures were "Clearly identified; not clearly broadcast by components; not adhered to on purpose by some units." This comment supports the findings of the control lessons learned.

Question 25 asked if there should be a single joint agency tracking all express channel requisitions and movements. No consensus was reached. Negative comments expressed a fear of increased bureaucracy and slower response times. Positive comments said USTRANSCOM should do this through the Global Transportation Network (GTN).

Question 26 asked if all 999/TP1 requests should be routed through a single supported command agency for verification prior to transmission to CONUS based supporting logistics commands. Sixty percent of the Delphi experts disagreed or strongly disagreed that all TP-1 requisitions should be routed through a single supported command agency. Written comments reflect the expert's belief that this would take to long, and therefore be detrimental, or that it is a Service responsibility.

The literature does state that support of a deployed force is a Service responsibility, but, the supported CINC must define his priorities. The findings show that the Delphi experts agree that the CINC must decide what goes, not USTRANSCOM. The experts are less clear on how the CINC should do this.

In concert with findings to establish the Theater Joint Transportation Board, further detailed descriptions of USTRANSCOM, Supported CINC, and Service responsibilities are required for the allocation and control of inter-theater airlift.

Improvement Four. MILSTAMP and JOPES must interface, and express procedures must be a part of both. Delphi questions 10 and 11 ask if the JOPES unit sustainment procedures should be integrated into MILSTAMP and if express airlift cargo identification and clearance requirements should be integrated into MILSTAMP.

Delphi experts could not reach consensus on integrating JOPES into MILSTAMP. All written comments stated that the two should interface to provide better visibility. One comment stated that the question should be reversed, e.g., that MILSTAMP be integrated into JOPES as the "execution system."

The Delphi experts did reach a 60 percent agree consensus on including express procedures into MILSTAMP. One comment noted that express procedures are already in MILSTAMP. To clarify that comment; all general air clearance procedures and the TP-1 expedited handling codes are contained in MILSTAMP. What is not contained is the Desert Express small package, overnight shipment channel concept. The question did not clearly state this as a part of the express procedures referenced.

Summary. Each of the changes recommended are based on findings that control of the air clearance procedures was lacking. This was also the subject of a repeated lesson learned and a suggestion to provide supported force liaisons at key transportation nodes. Clearly, solving the control problem is paramount before any institutionalization can occur.

Investigative question #5: Where should Desert Express type procedures be formalized?

The need to formalize Desert Express type procedures has been clearly identified by General Johnson, as Commander

in Chief USTRANSCOM and MAC, and verified by a 73 percent strongly agree consensus of the Delphi experts on question six which asked if formalization was required. One expert commented, "There is no reason to believe the same situation will not occur again. If the procedures are not set down in directives, those that follow us will re-invent the wheel." The literature review emphasizes this notion by showing that an "express" type mission has been used in all conflicts dating back to World War II. This supports a position that some type of formalized "express" guidance should be incorporated into regulations and/or directives.

Question seven tested the opposite premise: that express airlift regulations and directives are not required. Sixty-six percent of the respondents disagreed or strongly disagreed with this statement. The majority of these desired some type of generic express airlift guidance through formalized doctrine. As one expert puts it, "One centralized directive blessed by JCS so everybody plays by the same rules." Other experts felt that if the supported CINC wants an express airlift, he should include it in his OPLAN and allocate airlift accordingly. However, there were also negative views on formalizing an express system into regulations. One comment stated, "Why publish a regulation/directive that will only be pulled off the shelf during contingencies?"

Questions six and seven were of an all or nothing nature, either yes (formalize), or no (do not formalize).

Question 23 presented a half-and-half option by asking if Desert Express procedures should be formalized by the participating organizations without centralized direction or regulation. The Delphi experts reached a 93 percent disagree or strongly disagree consensus. As one expert stated, "TRANSCOM should direct implementation as circumstances require at the CINCs request."

Question 28 asked which of a given list of organizations should direct the commencement of an express airlift channel. The Delphi experts were evenly split between the Supported CINC and USTRANSCOM. So while the experts agree that procedures are required, they are less certain as to who should trigger their execution.

Question 29 asked the experts where they thought express airlift procedures should be outlined. This question was asked in multiple choice format allowing the respondents to mark more than one answer. Twenty-two responses were given by the 15 respondents. The majority or responses, nine and seven respectively, were for JCS Pubs and CINC OPLANs. The remaining six responses were split among DOD Directives (1), USTRANSCOM Regulation (2), MAC Regulations (1), others (2). The majority of written comments focused on the supported CINC's OPLAN as the trigger for a JCS specified express airlift procedure.

Summary. It is clear that the experts agree that an express airlift system should be formalized in writing. They are less certain as to where they should be, and who

should initiate execution. Written comments indicate general agreement that JCS Pubs should contain a provision for an express airlift which the Supported CINC can include in his OPLAN if required. Or, as one expert summed it up, "Put it in JCS Pubs if formalized with OPLANs used as the trigger."

Unaddressed Delphi Questions

This section addresses Delphi questions asked but not addressed in the specific findings above. Initially, this research assumed that Desert Express resulted from abuses of the supply requisition and transportation process; e.g.; users improperly marking low priority requests as high priority so that they could get them faster. Based on this assumption, survey questions 1, 2, and 3 were asked to provide support for this position.

As the research proceeded, this assumption was overcome by events as the literature search revealed numerous legitimate procedures were just as likely to have caused the backlogs. The research was directed toward the legitimate reasons and, as a result, the questions dealing with any abuses were not applicable to the findings. The results of the expert opinions, however, are included in Appendices C and D if the reader desires to delve into side issues.

Conclusion

This chapter described the results and findings from the literature search and two iterative rounds of Delphi

questioning. The Delphi technique polled express airlift experts in an attempt to reach consensus on the attributes and characteristics of an express system. Feedback from 19 experts in round one of the survey and 15 in round two provided data to answer the research questions proposed in Chapter I. Where possible, the results of the Delphi survey were compared against those findings presented in the literature review found in Chapter II. The answers to the investigative questions found in this chapter provided the framework required to identify the problems and strengths associated with an express airlift system. Chapter V presents conclusions, contributions of this research, and recommendations for future research.

V. Conclusions and Recommendations

The military has repeatedly identified a need for an express system during contingency operations and war. The success of Desert Express led General Johnson, Commander in Chief of both USTRANSCOM and MAC to state, "We need to institutionalize this process so we don't reinvent the wheel every time we have a Desert Storm" (CINCMAC note, 15 August 1991). This opinion was echoed in the USAF White Paper. It stated that "Desert Express was a success," and recommends that DOD "Institutionalize the Desert Express concept as a 'card in our deck' which MAC may or may not play, depending on the scenario" (HQ USAF White Paper, 1991:10).

This research was initiated to determine: *what improvements should be made to express airlift systems based on lessons learned from past conflicts and Operation Desert Shield/Desert Storm.* The literature review identified that in all United States military contingency operations since the inception of airlift, there has been some type of "express" airlift to move high priority cargo to the theater of operation. In all cases, the need for an express airlift channel resulted from the backlog of high priority cargo at the aerial ports of embarkation. These backlogs were caused by: airlift asset shortfalls, a lack of planning, and/or a lack of movement control. Desert Express was created during Operation Desert Shield/Storm to insure that high priority cargo would not get bogged down in normal channels.

Key to General Johnson's statement above is that the "we" in his statement includes the myriad of participants, in and out of USTRANSCOM, who play key roles in air shipment of cargo. Each of these have a part to play in identifying the positive and negative aspects of express airlift, suggesting improvements, and then formalizing the solutions within their respective organizations.

The Delphi technique provided the means for polling transportation experts in an attempt to reach consensus on recommended courses of action prior to the institutionalization process. The experts represented the population of planners, operators, regulators, and users associated with the movement of "show stopper" cargo on Desert Express during Desert Shield/Storm.

The Delphi experts agreed with General Johnson that institutionalization of an express airlift is required. The experts provided feedback on crucial aspects of Desert Express along with recommended actions to improve its operation. Finally, the experts provided their opinions as to where express airlift procedures should be documented.

The information gathered during all phases of this research provided the necessary information to answer the five investigative questions proposed in Chapter I. Conclusions for each question represent suggested actions to take or coordinate as part of the Desert Express formalization process.

Investigative Question One:

What organizations were involved and what were their Desert Express roles?

The myriad of Desert Express participants included: the four Services, their material managers and airlift control agencies; the Joint Chiefs of Staff including the Defense Logistics Agency; two Unified Commands (USTRANSCOM and USCENTCOM); the Military Airlift Command including the 21st Air Force and 437th Military Airlift Wing; and, the civilian express airlines. The magnitude of this list indicates what a complex gathering of organizations Desert Express required given that there were no "Desert Express" type procedures in existence at the beginning of Operation Desert Shield.

Desert Express was created within the existing military airlift system by modifying or creating procedures to meet current requirements. This resulted in a tying together of familiar organizations in an unfamiliar operation. The Desert Express "organization" thus developed proved adequate to the task.

Conclusion. Organizations involved in Desert Express accomplished their missions by throwing away the book, creating ad hoc procedures, and assuming ad hoc roles to achieve success. Service air clearance operations were key. As the ACAs went, so went Desert Express. The ACAs were also the weakest links, as most Desert Express problems revolved around their operations.

Investigative Question Two:

What are the critical Desert Express lessons learned?

Three critical Desert Express lessons were learned: these were, in fact, relearned from past contingencies. First, aerial port backlogs are inevitable, if for no other reason than the "fog of war." Increased volumes of wartime cargo has and will always be greater that the airlift available to lift it. Even when allowing for civilian assets to back up military airframes, a lack of communications and the short period of combat will force the unwanted creation of backlogs.

Second, a dedicated express airlift channel will also always be required to move critical cargo for the same reasons stated above. Additionally, supply, transportation, and allocation priorities instituted during a contingency automatically increase the gross amount and percentage of high priority critical cargo.

Third, Supported CINC liaisons are needed at aerial ports. In Korea and Vietnam, a movement control agency controlled inter-theater airlift. A liaison at the APOEs would perform similar functions to coordinate prioritization and diversion actions between ACAs and deployed forces.

Conclusion. Knowing that backlogs will always occur provides ample opportunity to develop permanent solutions rather than suffer the growing pains of a series of repeated problems and similar solutions from conflict to conflict.

An express airlift operation must be made a permanent part of Department of Defense airlift procedures.

Investigative Question Three:

What changes have already been made or suggested as a result of Desert Express?

The mention of a Desert Express type operation in the proposed JCS Pub 4-01 is the only change found during the Literature Review. It represents a significant step in the institutionalization process. More is required to ensure procedures are developed by each participating organization. With all JCS logistics publications in revision, the additional steps may already be in the works.

Conclusion. The mention of MAC implementing future "Desert Expresses" in the proposed JCS Pub 4-01 is the only visible change resulting from Desert Express to date. It is not clear if other Desert Express prompted changes are being worked.

Investigative Question Four:

What improvements to the Desert Express system should be made before it is formalized?

As Desert Express was an overall success, improvements center around tightening control over the existing elements and one organizational change is recommended.

The coordination links between the Supported CINC, the Services, and Airlift Clearance Authorities must be improved. This coordination is critical to controlling the

input of cargo in the airlift pipeline. This in turn controls backlogs at the aerial ports. The majority of problems during Desert Express' life occurred in this area.

Further delineation of the functions and responsibilities of the Supported CINC and the CINC USTRANSCOM is required. Specifically, clear lines of responsibility must be drawn identifying which organization directs the implementation of, and controls the operation of, inter-theater express airlift channels.

Increased visibility is a tool required to increase universal coordination and control over the air express pipeline. MILSTAMP and JOPES must interface through the proposed Global Transportation Network (GTN).

One organizational change must be implemented. Supported CINCs must designate authority and responsibility to a theater Joint Transportation Board to coordinate inbound airlift operations. This board should have the authority to change allocations, priorities, and divert cargo as required. The Supported CINC liaison mentioned as a lesson learned would be a representative of the JTB.

Conclusion. Control over the express airlift channels must be improved. A theater JTB should always be established. When used in concert with an APOE liaison team, improved ACA controls and visibility, and clearer lines of responsibility, the JTB should prove as effective as its Korean and Vietnam conflict predecessors at controlling inter-theater airlift operations.

Investigative Question Five:

Where should Desert Express procedures be formalized?

Express airlift procedures should be outlined at the JCS level in joint publications. The mention of MAC implementing future "Desert Expresses" in the proposed JCS Pub 4-01 is not sufficient to ensure all organizations are prepared to recreate Desert Express in a timely manner.

Supported CINCs should also include mention of an express airlift channel in his OPLAN and the implementing instructions in his Operations Order (OPORD). These two acts will trigger the development of procedures by participating and supporting organizations. The Supported CINC should then direct implementation of express procedures as required.

Conclusion. General express airlift procedures should be contained in JCS Pubs. More specific procedures should be developed by supporting and participating organizations. Supported CINCS should include implementation of the express channels in their OPLANs, and direct its implementation as needed during a contingency operation.

Research Objective

The research objective as stated in Chapter I was to determine: What improvements should be made to express airlift systems based on lessons learned from past conflicts and Operation Desert Shield/Desert Storm. If all

improvements were summed up in one word, it would be "control."

Airlift shortfalls are a fact of life, as are increased volumes of cargo in wartime. Even with good plans, experts agree that backlogs will always occur. Therefore, the only one of three key problem areas (assets, plans, or control) open for influence is control.

Improved control should be achieved through: increased authority for a theater Joint Transportation Board, with liaison teams at CONUS aerial ports; increased coordination between the JTB, Service Material Managers, and the Service Airlift Control Agencies; and clearer lines of responsibilities between the CINCs of the Unified Commands and USTRANSCOM.

Contributions of the Research

In the process of answering the Investigative Questions and the Research Objective, this research provided insights into a myriad of areas. First, the research provided insight into numerous past express operations and their causes. Second, the research uncovered that abuse of the UMMIPS priority assignment system is not necessary to flood and backlog airlift channels.

Third, and perhaps most important, this research provided an opportunity to obtain and analyze expert input on a wide range of questions. The insights gained from the Delphi process itself were as interesting as the scored

results. The anonymity of the process provided the experts an opportunity to "tell it like they saw it."

Expert comments are included in Appendices C and D to provide the reader with added emphasis on the problems. The comments also provide future researchers into airlift control problems with documented frustrations and recommendations from express system implementers with recent experience.

Areas of Suggested Research

This research uncovered two areas of concern affecting express airlift operations. The first is the UMMIPS and MILSTAMP expedited handling signal "priorities within a priority" process. Delphi answers and perceived abuse problems (including our own) indicate confusion exists concerning their use and purpose. Recommend that future research follow the UMMIPS study recently directed by the Secretary of Defense in order to determine what effect changes may have in the assignment of Transportation Priorities which impact all cargo entering express airlift operations.

The second area impacting Desert Express were the intra-theater express operations, both air and ground, which met arriving Desert Express flights in Saudi Arabia. As a chain is only as good as its weak link, Desert Express was only as good as the intra-theater leg to the final customer. The study should look at the theater procedures as part of

the total express airlift pipeline to determine if these procedures should be institutionalized as well.

Summary

This research provided a thorough description of past and recent express airlift operations, their causes, and solutions. In each new case, the causes and solutions mirrored those of the preceding case. By institutionalizing the Desert Express airlift procedures including the suggested improvements, the current "reinvent the wheel" cycle can be broken.

Appendix A: Delphi Respondents

1. Department of Defense Joint Chiefs of Staff (JCS)/J4
   Washington, D.C. 20318-4000

REPHLO, J. COL, USAF 227-1408
Executive Officer

NEWLANDS, G.W. LTC, USAF 227-4711
J4-Mobility Division

NEWTON LTC, USAF 227-0744
J4-Mobiltiy Division

2. HQ, Department of the Air Force (HQAF)
   Washington, D.C. 20330-1000

BYRD, K. LTC, USAF 227-7322
LGTX DCS/Logistics

SPADE, T. (MR) 227-4742
AF/LEYT DSC/Logistics

3. U.S. Transportation Command (USTRANSCOM)
   Scott Air Force Base, IL 6225-7001

THOMPSON, COL, USAF 576-6854
TCJ3/J4 Operations and Logistics

ENGLE, M. LTC, USAF 576-6854
TCJ3/J4 Operations Officer

4. Military Airlift Command (MAC),
   Scott Air Force Base, IL 6225-7001

QUIRK, J. COL, USAF 576-4434
XON Chief, Aerial Port Opns

LUND, LTC, USAF 576-3101
XOOXA Airlift Operations

LINDEMAN, COL, USAF 576-3101
HQ MAC/DOO Chief Current Operations

BOTTJER, D.L. COL, USAF 576-3101
HQ MAC/DOO Deputy Current Operations

5. U.S. Air Force Logistics Command (AFLC)
Wright-Patterson Air Force Base, OH 45401

THALHEIM, T. MAJ, USAF 257-7201
AFLC/Plans and Programs

RIFFE, W. (MR) 787-6703
AFLC/LGTX Resources Division

MANN, VICKI L. MAJ, USAF 787-4351
HQ AFLC/LGTA Chief of Startegic Airlift

6. HQ, U.S. Central Command (CENTCOM)
McDill Air Force Base, FL

EDMISTEN, R.E. LTC, USAF 965-2040
Director of Transportation

SPECKMAN, J. LTC, USAF 968-6602
CCJ4/7 Transportation Officer

7. Defense Logistics Agency (DLA)
Cameron Station, VA

ENDRES, W. COL, USAF 274-6754
Director of Transportation

8. HQ, 21st Air Force (21AF)
McGuire Air Force Base, NJ 08641

TREMBLY, R. CAPT, USAF 440-3850
21AF/TRO Transportation Officer

9. U.S. Army Material Command (AMC)
Alexandria, VA

YOUNG, CLIFF (MR) 284-9271
POC/Army Material Command

10. HQ, Department of the Army (HQDA)
Washington, D.C. 20310-0546

STINSON, (MR) 224-6756
DALO-SMP/Defense Logistics Agency

11. Tactical Air Command (TAC)
Langley A.F.B., Virginia

BUCKMAN, MAJ 574-3807
HQ TAC/LGT Logistics Officer

12. Army Air Clearance Authority (ACA)
Presidio of San Francisco, California 94129

BLACK, MAJ 586-5349
AMX LC-L Chief, Air Clearance Authority

13. 437 MAW/DOXT, Charleston AFB (MAC)
Charleston AFB, SC 29404

JACKSON, D. CAPT, USAF 576-3911
DOXT (MAC) Terminal Operations Officer

DONOVAN, T.P. SMSgt, USAF 554-5540
NCOIC Terminal Operations

Appendix B: Round One Delphi Survey

AIR FORCE INSTITUTE OF TECHNOLOGY
School of Systems and Logistics (LSG)
Wright-Patterson Air Force Base, OH 45433

Dear Sir,

Desert Express was established and operated through hundreds of messages over a long period of time. Many procedures were not previously outlined by regulation. Still Desert Express is widely hailed as a success. Our graduate thesis research is an effort to capture what was good and bad about Desert Express and apply that knowledge to current directives.

Delphi surveys are conducted in areas where little or no research data exists. The survey is administered to a select few subject matter "experts". As such, your response is extremely important. The questions in this questionnaire are intended to stimulate your thinking about the express airlift process.

The questions are not meant to limit your responses. Please comment on anything you feel relates to the questions. The goal of this first questionnaire is to discover what role each respondent played as part of the overall system, and their views on the creation and future of express operations. The results of this first round will be compiled and presented in the Round Two questionnaire. That questionnaire will seek your opinions on the results of the Round One questionnaire in an attempt to reach a group consensus on the issues raised. Please complete and return the survey in the self-addressed envelope within one week of receipt. As soon as all responses are compiled, the second questionnaire will be distributed.

Please provide the rationale for your answers, especially in those areas where you feel strongly. Add any comments, examples or experiences that you have had that will help clarify your response.

Any comments, suggestions, and ideas regarding the research effort and its purpose are welcome. Please be assured that complete anonymity will be enforced. If you have any questions about the survey please call Major Judy Ford, at (513) 255-5023 (AV 785-5023).

A summary of the survey results will be provided to you upon completion. Thank you for participating in this survey.

TERRY BASHAM
CPT, TC, USA
LSG/GTM Student

JASON EVGENIDES
CAPT, USAF
LSG/GTM Student

Graduate Logistics Management Program/Transportation

Round One Delphi Questionnaire

1. This questionnaire requests two types of response. For the first group of questions, a Likert scale is provided for you to indicate the degree to which you agree or disagree with the comment. Please place the appropriate Likert number in the answer space provided. If the comment is not applicable to your experience or expertise, please place the letters NA in the answer space provided.

2. The final two questions are multiple choice. Please circle your response.

Strongly Agree	Agree	Agree or Disagree	Neither	Disagree	Strongly Disagree
1	2	3		4	5

1. Desert Express was created to bypass air cargo backlogs at existing APOEs (Dover & Tinker). _____

2. Desert Express was necessary to overcome abuses of the supply requisition and transportation priority systems (MILSTAMP & MILSTRIP). _____

3. Desert Express was necessary due to Operation Desert Shield rapid deployment requirements. _____

4. I was fully aware that Joint Chiefs of Staff Project Code 9BU was created to identify all Operation Desert Shield bound cargo.
_____

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
1	2	3	4	5

5. I was fully aware that Joint Chiefs of Staff Project Code 9AU was created to further segregate the highest of high priority cargo (999/TP1/MICAP/NMC). _____

6. To preclude re-inventing the wheel for each contingency, "express" procedures must be formalized into directives and/or regulations. _____

7. Express airlift regulations/directives are not required. Geographic CINCs must state the requirement, if needed, in their operations plans. _____

8. A separate express airlift channel mission is desired during contingencies due to unpredicted airlift requirements. _____

9. Had the Gulf War continued, Desert Express would have become unnecessary. _____

10. Joint Operations Planning System unit sustainment procedures must be integrated into MILSTAMP. _____

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
1	2	3	4	5

11. Express airlift cargo identification and clearance requirements must be integrated into MILSTAMP. _____

12. LOGAIR should have expanded service to include "Desert Express" operations making a separate system unnecessary. _____

13. When activated, Civilian Reserve Air Fleet planes should be used for express channels to free military assets. ____

14. Air cargo backlogs are inevitable during contingency operations. _____

15. Service air clearance authorities knew what the supported command's air shipment priorities were. _____

16. Stricter rules are required for challenging high priority shipments. _____

17. Service air clearance agencies require the authority to divert high priority cargo away from express channels. _____

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
1	2	3	4	5

18. Joint air cargo clearance teams consisting of members from the transportation component command, supporting commands, and supported command are required at each APOE for command, control and diversion actions. _____

19. TRANSCOM requires the authority to divert cargo. _____

20. My organization's manning was inadequate to handle the additional workload required by Desert Express. _____

21. My unit adhered to regulatory standard operating procedures throughout Desert Express's life cycle (plan, create, operate).
_____

22. Desert Express increased the number of tasks required of my position by regulation. _____

23. Desert Express procedures should be documented and formalized by each participating organization without centralized directives or regulation. _____

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
1	2	3	4	5

24. Desert Express policies and procedures were clearly identified. _____

25. There should be a single joint agency tracking all express channel requisitions and movements. _____

26. All 999/TP1 requests should be routed through a single supported command agency for verification prior to transmission to CONUS based supporting logistics commands. _____

27. Addition of a second mission (plane) to clear Desert Express backlogs resulted from abuse of the 9AU high priority supply requisition and transportation system. _____

Please circle your response, or provide a written answer in the space provided.

28. Which organization should direct the commencement of an express airlift channel:

(a) Supported CINC
(b) USTRANSCOM
(c) Military Airlift Command
(d) Joint Chiefs of Staff
(e) other _____

29. Express airlift procedures should be outlined in:

(a) DOD Directives
(b) JCS Publications
(c) USTRANSCOM Regulation
(d) OPLANS only
(e) MAC Regulation
(f) other _____

Appendix C: Round One Delphi Survey Comments

1. Desert Express was created to bypass air cargo backlogs at existing APOEs (Dover & Tinker).

"There would not have been a backlog if the services adhered to the priority system."

"The concept of DE was created in anticipation of cargo backlog not after. We knew the supply priority system would drive everything to air eligible."

"And to enable MAC to provide an air express service, something they traditionally had not offered."

"DE was created to move cargo that was "mission essential"-- backlogs at APOE's were a problem- not the cause for creating DE- --backlogs were created because of abuses to the movement priority (ie 999)."

"Perhaps bypass is a little misleading. DE was created to move the "war stopper" cargo."

"Only high priority 999 backlogs."

"Cargo backlogs forced the need. SAC had their own system."

2. Desert Express was necessary to overcome abuses of the supply requisition and transportation priority systems (MILSTAMP & MILSTRIP).

"The DE allocation forced the services to sort out their real priority."

"Maybe in some peoples mind. Is it an abuse to order at a high priority if you believe it may save a life in battle or in for preparing for fighting?"

"The reasons...(1) supply discipline almost non-existent as 80% of all cargo MICAP/999/PRI 1 etc...(2) Intransit visibility unsatisfactory."

"As stated above everything that arrived in the port was 999, that only left FIFO for sorting out what moved."

"Again, "abuse" may be to strong but the point is there was a higher number of high priority requests."

"Not necessarily it was designed to move the "most important of the important cargo."

"When all cargo carries the same priority, there is then no priority."

"Abuses of the priority system caused the backlog at Dover - but I believe you still would have needed a DE to rush high-priority parts."

3. Desert Express was necessary due to Operation Desert Shield rapid deployment requirements.

"We looked at DE as supporting the sustainment of forces not deployment."

"It was necessary due to abuses of the system caused by lack of discipline."

"It was really necessary to maintain the weapons systems. You can't fight if you can't fly. DE gave the ability to provide "next day service" for NMCS, half-way around the world. In commission rates were better than peacetime after DE began."

"Units self sufficient for 30 days...ie WRSK etc. Need to review what we take to war."

"Totally irrelevant, DE did not start until NOV, deployment began in AUG for Phase I and late NOV for Phase II."

"Not necessarily."

"Yes, but more importantly to provide a means to identify and express move the most mission impacting cargo."

"The issue was the high in-commission rates for the front line combat equipment. CINCCENT wants to be able to employ the maximum force should the need arise."

4. I was fully aware that Joint Chiefs of Staff Project Code 9BU was created to identify all Operation Desert Shield bound cargo.

"Yes, but DE used 9AU."

5. I was fully aware that Joint Chiefs of Staff Project Code 9AU was created to further segregate the highest of high priority cargo (999/TP1/MICAP/NMC).

"Main reason for the 9AU was to identify that cargo that was requisitioned for DE--without it requisitions would have to be hand massaged."

"Not really--DLA drove the 9AU because their system could not otherwise sort DE versus other high priority."

"We received all the message traffic at the ALCC and were working with CENTAF and CENTCOM to establish the best way to identify and "move" what really needed to move."

6. To preclude re-inventing the wheel for each contingency, "express" procedures must be formalized into directives and/or regulations.

"Yes, but then we will make a judgement call before implementation. It should not be "automatic"."

"OK, but setting up air express mission should remain only an option."

"That depends. "Express" must be in the OPLANS, and mentioned in general terms in regulations; but since situations are not the same in each contingency then flexibility of design is required. Formal instructions may show implementations."

"We're treating the symptom--not the cause. Need to plus up discipline and intransit visibility."

"According to TRANSCOM - this is SOP for all future contingencies."

"At the "macro" level as well as in procedural publications."

"Yes, at the level of DOD 4500.32R."

"There is no reason to believe the same situation will not occur again. If the procedures are not set down in directives, those that follow us will re-invent the wheel."

7. Express airlift regulations/directives are not required. Geographic CINCs must state the requirement, if needed, in their operations plans.

"B.S.--Ten years from now we will have to "re-invent the wheel" if we don't get it on paper. Transporters job is to get the "stuff" to the warfighting CINC--not wait for him to tell us how."

"Express not needed if adherence to existing priority system followed."

"Still feel we need a book to work from, however, each theater CINC needs to state his needs up front, so we can plan to use this method up front - not after the fact."

"CINC's should include requirement in OPLANs but this does not eliminate the requirement in other pubs."

"Absolutely not, must have linkage to MILSTAMP & ULN in TCN!"

"Foolish thinking--with no sense of reality."

8. A separate express airlift channel mission is desired during contingencies due to unpredicted airlift requirements.

"How big is contingency etc?"

"Maybe."

"Restrict to 999/MICAP/NMCS. One flight or more as needed. From CONUS and/or other theater as needed. Service allocations depending on which service is fighting."

"However, eliminating priority abuse could go far in moving cargo requiring expedited transportation."

"That is part of the basic concept."

"May be required."

"The requirement depends on the size of the contingency. There may be no need if the operation is small."

9. Had the Gulf War continued, Desert Express would have become unnecessary.

"It probably would have expanded--several missions per day."

"If anything it would have expanded."

"Once force deployments completed, allowing sustainment cargo backlogs to be controlled."

"Just the opposite."

"The larger the war - the more sustainment would be needed and the more "mission essential" items would be needed."

"In name perhaps, but a frequency channel would still be required for high priority cargo."

"Wrong! It would have become more important as NMCS rates increased as sortie rates increased."

"DE may well have been expanded."

10. Joint Operations Planning System unit sustainment procedures must be integrated into MILSTAMP.

"Some things have already been placed into MILSTAMP, such as change 29, unit move TCN; change 18, inclusion of NSN; change 15, unit moves."

"MILSTAMP must be integrated into JOPES. Channel requirements are currently being added to the deliberate planning process. Data input upon execution will be via GTN."

"MILSTAMP needs to be totally revamped."

"JOPS or more appropriately JOPES sustainment procedures produce notional requirements only. There is much more to this."

"In progress work now!"

11. Express airlift cargo identification and clearance requirements must be integrated into MILSTAMP.

"It already is there--all shipments must be cleared by the shipper service ACA. However ACA must have procedures to handle this kind of service."

"In general term[s] only."

"They're already there!"

"If MILSTAMP concept is reworked."

"We don't need separate systems."

"MILSTAMP and service ACA procedures and supply procedures."

12. LOGAIR should have expanded service to include "Desert Express" operations making a separate system unnecessary.

"LOGAIR is a domestic system that has outlived its usefulness--shipments for DE were routed to Charleston using commercial express service to insure they arrived on time."

"First--DE was a DOD lift system. LOGAIR can't support such an expansion. Go with what worked--civilian express systems were the primary feed."

"Maybe for "ugly" cargo which can't get to the APOE next day via commercial carrier. Right now LOGAIR has no route and extra section ability which can handle this."

"LOGAIR expansion to every shipping point is impractical."

"We have a commercial system already in existence which serves the "surge" or special requirements very nicely."

"DE was a "system" origin to destination!
Supply-->overnight express-->STRAT air-->Theater distribution-->User."

"LOGAIR is CONUS only!"

"The current LOGAIR system can not be expanded. The current LOGAIR plans make it impossible."

13. When activated, Civilian Reserve Air Fleet planes should be used for express channels to free military assets.

"Control, control, control. Organic gives us total flexibility ie hot spares, backup crews etc. DE was MACs #1 priority MSN."

"Depends on APODs."

"CRAF could be assigned, but military air appears better suited. More flexible, easier to rapidly load/unload, can land anywhere in theater and be offloaded. Depending on the type CRAF aircraft, special cargo handling equipment may be required."

"Only one of many alternatives."

"In all likelihood, will need the DE planes to go into the "HOT" airstrips. Too much trouble to get commercials into these areas and to have the MHE to support."

"Can be used to replace strat leg in non-hostile environment."

"Good idea, but we had to backup aircraft (C141) for each primary DE aircraft."

"The planner must be free to use the correct platform to satisfy requirements, whether military or civilian."

14. Air cargo backlogs are inevitable during contingency operations.

"Not necessarily if priority system is sound and airlift assets are available for the 15% of the cargo that goes by air."

"Depending on the size of the contingency."

"In my career and all previous contingencies, requirements have always exceeded capability."

"If the services are required to follow the rules and the ACA enforces, and the prior planning of movements is accurate (ie - when you say you need to move 20 short tons - don't show-up with 50 S/T)."

"And to some degree are necessary for good cargo management (high utilization)."

"Correct for large contingencies. This occurs when there is no discipline in the system."

15. Service air clearance authorities knew what the supported command's air shipment priorities were.

"If they did it would have precluded CENTCOM reps to be at the APOEs diverting cargo to surface."

"It varied by service and day/week/minute, etc..."

"They should have been reading the daily sitreps."

"Marines yes....Army/Navy/AF no!"

"They changed hourly - no one knows."

"N/A--but my guess is NO!"

"NO, only supported CINC logisticians knew."

"The supported command did not know, how can one expect the services to know."

16. Stricter rules are required for challenging high priority shipments.

"Rules must be universal among services. This is a DOD airlift system."

"Challenge system seemed to work well, just overwhelmed."

"If the current air challenge rules were fully implemented during DS/DS major problems would have occurred. Stricter rules on challenge would cause enormous supply and transportation problems."

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"Flexible rules for the spectrum of conditions from peace to war are required."

"YES, must have decision rules."

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"I like the idea as a transporter but the warfighting CINC must be allowed to determine the priorities."

"This really depends on what you mean. If "express channels" mean airlift then NO; only the CINC (or reps) should make that decision. If you mean "DE" like, then the ACA wouldn't divert, they may however, not clear due to size, compatibility, etc. Or set-up for another flight."

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"Not if the ACA knows what the CINCs priorities are & acts accordingly."

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"Not large teams, and only if they have communications with the CINC component reps."

"Only if discipline not maintained."

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"YES -- Supported CINC
-- Services
not TCC's or other supporting commands."

"So long as discipline is not exercised."

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"TRANSCOM is a mode operator--the shipper diverts cargo at the request of the CINC."

"They're the operator, not the shipper. Someone else has to keep them honest in peace and wartime."

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"Supported CINC retains that authority."

"Under the new authority granted to TRANSCOM by SECDEF, they are the daddy rabbit for all that moves."

"We are the operator not the customer."

"Not their job!"

"Supported CINC should do this through components who tell services to execute."

20. My organization's manning was inadequate to handle the additional workload required by Desert Express.

"B.S. no room for this attitude in war. You make it work. Everybody did."

"We worked in the AF OPS Center on a take-turn basis, and were augmented by Reserve personnel."

"DE was just one of many that overtaxed."

"Units within CONUS had all they needed - thru the augmentation by ACR units."

"Manning was taken from the other areas."

21. My unit adhered to regulatory standard operating procedures throughout Desert Express's life cycle (plan, create, operate).

"To some degree we started that way but it was "refine as we fly" otherwise we would have "planned it to death."

"We did what we had to do!"

"Most standards were revised to make DE a viable system."

"Used existing regs to create and implement."

22. Desert Express increased the number of tasks required of my position by regulation.

"Increased my tasks, but not by regulation."

"What regulation?"

"Had to keep track of cargo/pallet positions/etc...but that's normal."

"Not my position. However, the command was required to add manpower to manage DE."

"There was no regulation."

23. Desert Express procedures should be documented and formalized by each participating organization without centralized directives or regulation.

"This is a DOD airlift system."

"NO."

"Your in a dream world if you think TRANSCOM/MAC will decentralize their SOP's."

"Put it together, under the authority of TRANSCOM!"

24. Desert Express policies and procedures were clearly identified.

"Perhaps I am a little influenced by the fact that I wrote or approved most all of them so I thought they were great--a work of art."

"Policies and procedures evolved."

"Eventually. Remember, it was a first time effort and had to be developed, then fine tuned."

"Great deal of message traffic took place, with a chance for all to agree/disagree prior to start-up. After a few runs, we were asked for inputs on changes/fine-tuning."

"They were neither identified nor understood."

25. There should be a single joint agency tracking all express channel requisitions and movements.

"GTN should give the services the tracking capability."

"Good idea--think GTN will have that capability in future so all shippers can check."

"Who? When? How?"

"I don't think so. Each component of the CINC should be set up to do the leg work, and upbrief as necessary."

"More bureaucracy - services already geared to track."

"Again, TRANSCOM!"

"How about ITV in TRANSCOMs GTN system."

26. All 999/TP1 requests should be routed through a single supported command agency for verification prior to transmission to CONUS based supporting logistics commands.

"Great idea/concept but I think the whole system would grind to a halt at the supported CINC end."

"These are MICAPS! Don't slow the process down."

"Might be for each service (component) as they're responsible for maintaining their force."

"Feel that each service should have their own clearance authority."

27. Addition of a second mission (plane) to clear Desert Express backlogs resulted from abuse of the 9AU high priority supply requisition and transportation system.

"To some extent."

"Absolutely early on!! Toward the end, we needed the added capability."

"Generally speaking, I believe 9AU had integrity."

"DE overall was result of abuses and growing backlogs."

"We needed the extra plane to bring mission essential items during the conflict."

"The demand for "war stopper" movement grew due to the actual combat."

"NO! NO! it was increased failure rates in aircraft, missile, armor, helo's, and ship weapon systems as tempo of ops increased."

28. Which organization should direct the commencement of an express airlift channel:

(a) Supported CINC - 7
(b) USTRANSCOM - 7
(c) Military Airlift Command - 0
(d) Joint Chiefs of Staff - 1
(e) other - Services

COMMENTS:

29. Express airlift procedures should be outlined in:

(a) DOD Directives	- 5
(b) JCS Publications	- 7
(c) USTRANSCOM Regulation	- 6
(d) OPLANS only	- 5
(e) MAC Regulation	- 3
(f) other	- DTMR (2) Service Trans/Supply Regs

COMMENT:

"Need to fix the problem (supply discipline) not the workaround."

Appendix D: Round Two Delphi Survey

AIR FORCE INSTITUTE OF TECHNOLOGY
School of Systems and Logistics (LSG)
Wright-Patterson Air Force Base, OH 45433

Dear Sir,

Thank you for completing the first round of the AFIT Delphi Survey on Desert Express. Your comments were of great value to this research. Enclosed you will find the second round of the Delphi survey containing the same questions from round one along with respondent feedback. Please return your completed second round survey within one week; it is essential to have timely and complete participation in order to assure successful completion of the Thesis effort.

We are certain that you will find the comments of other Desert Express experts interesting. Not all questions require answers in the second round because consensus was reached in the first round of the Delphi Survey. The criterion for consensus was established at 60% agreement on a single response item. The percent of consensus agreement is provided for each answer exceeding the 60% criteria. The questions not requiring a new response are astericked and are accompanied by the statement "No Response Required". Mean ratings and comments from other expert respondents are provided to assist you in completing these questions. Please consider all the feedback in making your responses on the second round of the survey.

Again, as in round one, please provide the rationale for your answers, especially in those areas where you feel strongly. Please review the feedback comments and provide your reactions to and/or synthesis of these comments.

Any comments, suggestions, and ideas regarding the research effort and its purpose are welcome. Please be assured that complete anonymity will be enforced. If you have any questions about the survey please call Major Judy Ford, at (513) 255-5023 (AV 785-5023).

A summary of the survey results will be provided to you upon completion. Thank you again for taking the time to participate in this survey. Please return the survey within one week.

TERRY BASHAM
CPT, TC, USA
LSG/GTM Student

JASON EVGENIDES
CAPT, USAF
LSG/GTM Student

Graduate Logistics Management Program/Transportation

Round Two Delphi Questionnaire

A Likert scale is provided following the round one comments for each question. Please indicate your new answer by circling the appropriate Likert number. If a question is not applicable to your experience or expertise, please circle the number 6. Questions not requiring a response are astericked, and the comment "No Answer Required" precedes the question.

1. Desert Express was created to bypass air cargo backlogs at existing APOEs (Dover & Tinker).

ROUND 1 RESULTS: Mean Response 2.47

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
5	5	2	4	1	0

ROUND 1 COMMENTS:

"There would not have been a backlog if the services adhered to the priority system."

"The concept of DE was created in anticipation of cargo backlog not after. We knew the supply priority system would drive everything to air eligible."

"And to enable MAC to provide an air express service, something they traditionally had not offered."

"DE was created to move cargo that was "mission essential"--backlogs at APOE's were a problem- not the cause for creating DE- --backlogs were created because of abuses to the movement priority (ie 999)."

"Perhaps bypass is a little misleading. DE was created to move the "war stopper" cargo."

"Cargo backlogs forced the need. SAC had their own system."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

2. Desert Express was necessary to overcome abuses of the supply requisition and transportation priority systems (MILSTAMP & MILSTRIP).

ROUND 1 RESULTS: Mean Response 2.24

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
6	7	0	2	2	0

ROUND 1 COMMENTS:

"The DE allocation forced the services to sort out their real priority."

"Maybe in some peoples mind. Is it an abuse to order at a high priority if you believe it may save a life in battle or in for preparing for fighting?"

"The reasons...(1) supply discipline almost non-existent as 80% of all cargo MICAP/999/PRI 1 etc...(2) Intransit visibility unsatisfactory."

"As stated above everything that arrived in the port was 999, that only left FIFO for sorting out what moved."

"Again, "abuse" may be to strong but the point is there was a higher number of high priority requests."

"Not necessarily it was designed to move the "most important of the important cargo."

"When all cargo carries the same priority, there is then no priority."

"Abuses of the priority system caused the backlog at Dover - but I believe you still would have needed a DE to rush high-priority parts."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

3. Desert Express was necessary due to Operation Desert Shield rapid deployment requirements.

ROUND 1 RESULTS: Mean Response 3.29

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
3	3	2	4	5	0

ROUND 1 COMMENTS:

"We looked at DE as supporting the sustainment of forces not deployment."

"It was necessary due to abuses of the system caused by lack of discipline."

"It was really necessary to maintain the weapons systems. You can't fight if you can't fly. DE gave the ability to provide "next day service" for NMCS, half-way around the world. In commission rates were better than peacetime after DE began."

"Units self sufficient for 30 days...ie WRSK etc. Need to review what we take to war."

"Totally irrelevant, DE did not start until NOV, deployment began in AUG for Phase I and late NOV for Phase II."

"Not necessarily."

"Yes, but more importantly to provide a means to identify and express move the most mission impacting cargo."

"The issue was the high in-commission rates for the front line combat equipment. CINCCENT wants to be able to employ the maximum force should the need arise."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2----------3----------4----------5----------6->

Comments:

*** NO RESPONSE REQUIRED ***
4. I was fully aware that Joint Chiefs of Staff Project Code 9BU was created to identify all Operation Desert Shield bound cargo.

ROUND 1 CONSENSUS: 73% HIGHLY AGREE

5. I was fully aware that Joint Chiefs of Staff Project Code 9AU was created to further segregate the highest of high priority cargo (999/TP1/MICAP/NMC).

ROUND 1 RESULTS: Mean Response 1.82

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
8	7	0	1	1	0

ROUND 1 COMMENTS:

"Main reason for the 9AU was to identify that cargo that was requisitioned for DE--without it, requisitions would have to be hand massaged."

"Not really--DLA drove the 9AU because their system could not otherwise sort DE versus other high priority."

"We received all the message traffic at the ALCC and were working with CENTAF and CENTCOM to establish the best way to identify and "move" what really needed to move."

Your New Answer: (Circle Number)

Strongly Agree Agree Neither Agree or Disagree Disagree Strongly Disagree Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

*** NO RESPONSE REQUIRED ***
6. To preclude re-inventing the wheel for each contingency, "express" procedures must be formalized into directives and/or regulations.

ROUND 1 CONSENSUS: 73% HIGHLY AGREE

7. Express airlift regulations/directives are not required. Geographic CINCs must state the requirement, if needed, in their operations plans.

ROUND 1 RESULTS: Mean Response 3.35

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
4	1.5	1	5.5	5	0

ROUND 1 COMMENTS:

"B.S.--Ten years from now we will have to "re-invent the wheel" if we don't get it on paper. Transporters job is to get the "stuff" to the warfighting CINC--not wait for him to tell us how."

"See above." [Above Repeated: "That depends. "Express" must be in the OPLANS, and mentioned in general terms in regulations; but since situations are not the same in each contingency then flexibility of design is required. Formal instructions may show implementations."]

"Express not needed if adherence to existing priority system followed."

"Still feel we need a book to work from, however, each theater CINC needs to state his needs up front, so we can plan to use this method up front - not after the fact."

"CINC's should include requirement in OPLANs but this does not eliminate the requirement in other pubs."

"Absolutely not, must have linkage to MILSTAMP & ULN in TCN!"

"Foolish thinking--with no sense of reality."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2----------3----------4----------5----------6->

Comments:

8. A separate express airlift channel mission is desired during contingencies due to unpredicted airlift requirements.

ROUND 1 RESULTS: Mean Response 2.53

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	9	5	1	1	0

ROUND 1 COMMENTS:

"See reply to #6 above. How big is contingency etc?" [Above Repeated: "Yes, but then we will make a judgement call before implementation. It should not be "automatic".]

"Maybe."

"Restrict to 999/MICAP/NMCS. One flight or more as needed. From CONUS and/or other theater as needed. Service allocations depending on which service is fighting."

"[Agree] However, eliminating priority abuse could go far in moving cargo requiring expedited transportation."

"That is part of the basic concept."

"May be required ->(1)." (CPT Basham Note: I believe this to mean that if the word clause "MAY BE REQUIRED" was used, the respondent would have scored this as Strongly Agree.)

"The requirement depends on the size of the contingency. There may be no need if the operation is small."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

9. Had the Gulf War continued, Desert Express would have become unnecessary.

ROUND 1 RESULTS: Mean Response 4.41

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	1	1	5	10	0

ROUND 1 COMMENTS:

"It probably would have expanded--several missions per day."

"If anything it would have expanded."

"Once force deployments completed, allowing sustainment cargo backlogs to be controlled."

"Just the opposite."

"DE wasn't necessary to begin with."

"The larger the war - the more sustainment would be needed and the more "mission essential" items would be needed."

"In name perhaps, but a frequency channel would still be required for high priority cargo."

"Wrong! It would have become more important as NMCS rates increased as sortie rates increased."

"DE may well have been expanded."

Your New Answer: (Circle Number)

Strongly Agree Agree Neither Agree or Disagree Disagree Strongly Disagree Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

10. Joint Operations Planning System unit sustainment procedures must be integrated into MILSTAMP.

ROUND 1 RESULTS: Mean Response 2.33

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
5	4	3	2	1	2

ROUND 1 COMMENTS:

"Some things have already been placed into MILSTAMP, such as change 29, unit move TCN; change 18, inclusion of NSN; change 15, unit moves."

"MILSTAMP must be integrated into JOPES. Channel requirements are currently being added to the deliberate planning process. Data input upon execution will be via GTN."

"MILSTAMP needs to be totally revamped."

"JOPS or more appropriately JOPES sustainment procedures produce notional requirements only. There is much more to this."

"In progress work now!"

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

*** NO RESPONSE REQUIRED ***
11. Express airlift cargo identification and clearance requirements must be integrated into MILSTAMP.

ROUND 1 CONSENSUS: 60% AGREE

12. LOGAIR should have expanded service to include "Desert Express" operations making a separate system unnecessary.

ROUND 1 RESULTS: Mean Response 4.00

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	0	3	7	6	0

ROUND 1 COMMENTS:

"LOGAIR is a domestic system that has outlived its usefulness--shipments for DE were routed to Charleston using commercial express service to insure they arrived on time."

"First--DE was a DOD lift system. LOGAIR can't support such an expansion. Go with what worked--civilian express systems were the primary feed."

"Maybe for "ugly" cargo which can't get to the APOE next day via commercial carrier. Right now LOGAIR has no route and extra section ability which can handle this."

"LOGAIR expansion to every shipping point is impractical."

"We have a commercial system already in existence which serves the "surge" or special requirements very nicely."

"DE was a "system" origin to destination!
Supply-->overnight express-->STRAT air-->Theater distribution--->User."

"LOGAIR is CONUS only!"

"The current LOGAIR system can not be expanded. The current LOGAIR plans make it impossible."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

13. When activated, Civilian Reserve Air Fleet planes should be used for express channels to free military assets.

ROUND 1 CONSENSUS: 60% Neither Agree or Disagree (Please rescore)

ROUND 1 RESULTS: Mean Response 3.29

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	2	9	5	1	0

ROUND 1 COMMENTS:

"Control, control, control. Organic gives us total flexibility ie hot spares, backup crews etc. DE was MACs #1 priority MSN.

"Depends on APODs.

"CRAF could be assigned, but military air appears better suited. More flexible, easier to rapidly load/unload, can land anywhere in theater and be offloaded. Depending on the type CRAF aircraft, special cargo handling equipment may be required."

"Only one of many alternatives."

"In all likelihood, will need the DE planes to go into the "HOT" airstrips. Too much trouble to get commercials into these areas and to have the MHE to support."

"Can be used to replace strat leg in non-hostile environment."

"Good idea, but we had to backup aircraft (C141) for each primary DE aircraft."

"The planner must be free to use the correct platform to satisfy requirements, whether military or civilian."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

*** NO RESPONSE REQUIRED ***
14. Air cargo backlogs are inevitable during contingency operations.

ROUND 1 CONSENSUS: 60% AGREE

15. Service air clearance authorities knew what the supported command's air shipment priorities were.

ROUND 1 RESULTS: 3.63

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	2	4	4	5	1

ROUND 1 COMMENTS:

"If they did it would have precluded CENTCOM reps to be at the APOEs diverting cargo to surface."

"It varied by service and day/week/minute, etc..."

"They should have been reading the daily sitreps."

"Marines yes....Army/Navy/AF no!"

"They changed hourly - no one knows."

"N/A--but my guess is NO!"

"NO, only supported CINC logisticians knew."

"The supported command did not know, how can one expect the services to know."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

16. Stricter rules are required for challenging high priority shipments.

ROUND 1 RESULTS: Mean Response 2.59

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
4	6	1	5	1	0

ROUND 1 COMMENTS:

"Rules must be universal among services. This is a DOD airlift system."

"Challenge system seemed to work well, just overwhelmed."

"If the current air challenge rules were fully implemented during DS/DS major problems would have occurred. Stricter rules on challenge would cause enormous supply and transportation problems."

"Enforcement by services and ACAs all that is needed."

"Peacetime - the cost of transportation may become a constraint in using priority transportation. Wartime is a different ballgame, I don't think stricter rules will help much."

"As stated already - ACAs must be empowered and know what they are doing."

"Flexible rules for the spectrum of conditions from peace to war are required."

"YES, must have decision rules."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

17. Service air clearance agencies require the authority to divert high priority cargo away from express channels.

ROUND 1 RESULTS: Mean Response 2.18

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
7	4	2	4	0	0

ROUND 1 COMMENTS:

"I like the idea as a transporter but the warfighting CINC must be allowed to determine the priorities."

"This really depends on what you mean. If "express channels" mean aircraft then NO; only the CINC (or reps) should make that decision. If you mean "DE" like, then the ACA wouldn't divert, they may however, not clear due to size, compatibility, etc. Or set-up for another flight."

"Lack of discipline major problem."

"Unless there is a way for money to determine the priority--customer "buys" the transportation. In a contingency situation this may or may not work. It has not been tested."

"Not sure I understand this one. If you mean that the services ACA's are required to declare the items that move via DE vs what goes regular movement - then yes strongly agree."

"ACA's or whoever the services/CINCs want to do the job."

"YES, Need supported CINC decision rules."

"The service must support the CINC conducting the operation. The unified command must have the authority, not the service."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

18. Joint air cargo clearance teams consisting of members from the transportation component command, supporting commands, and supported command are required at each APOE for command, control and diversion actions.

ROUND 1 RESULTS: Mean Response 2.35

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
5	5	4	2	1	0

ROUND 1 COMMENTS:

"Not if the ACA knows what the CINCs priorities are & acts accordingly."

"See #17. The supported CINC (his reps) must be the ones to sort it out at the APOE." [Above Repeated: " I like the idea as a transporter but the warfighting CINC must be allowed to determine the priorities."]

"Not large teams, and only if they have communications with the CINC component reps."

"Only if discipline not maintained."

"I would like to say that this should not be necessary, however, I am realistic enough to know that there will always be a need to have your reps at the APOEs to insure your critical cargo moves first."

"YES -- Supported CINC
-- Services
not TCC's or other supporting commands."

"So long as discipline is not exercised."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

19. TRANSCOM requires the authority to divert cargo.

ROUND 1 RESULTS: Mean Response 3.94

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	3	3	3	8	0

ROUND 1 COMMENTS:

"TRANSCOM is a mode operator--the shipper diverts cargo at the request of the CINC."

"See #17 & #18." [Above Repeated: "I like the idea as a transporter but the warfighting CINC must be allowed to determine the priorities."]

"They're the operator, not the shipper. Someone else has to keep them honest in peace and wartime."

"The CINC is the one who knows what he needs and when he needs it, not TRANSCOM."

"Supported CINC retains that authority."

"Under the new authority granted to TRANSCOM by SECDEF, they are the daddy rabbit for all that moves."

"[TRANSCOM is] the operator not the customer."

"Not their job!"

"Supported CINC should do this through components who tell services to execute."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

20. My organization's manning was inadequate to handle the additional workload required by Desert Express.

ROUND 1 RESULTS: Mean Response 3.07

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
2	4	3	3	3	2

ROUND 1 COMMENTS:

"B.S. no room for this attitude in war. You make it work. Everybody did."

"We worked in the AF OPS Center on a take-turn basis, and were augmented by Reserve personnel."

"DE was just one of many that overtaxed."

"Units within CONUS had all they needed - thru the augmentation by ACR units."

"Manning was taken from the other areas."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

21. My unit adhered to regulatory standard operating procedures throughout Desert Express's life cycle (plan, create, operate).

ROUND 1 RESULTS: Mean Response 2.87

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
3	4	2	4	2	2

ROUND 1 COMMENTS:

"To some degree we started that way but it was "refine as we fly" otherwise we would have "planned it to death."

"We did what we had to do!"

"Most standards were revised to make DE a viable system."

"Used existing regs to create and implement."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

22. Desert Express increased the number of tasks required of my position by regulation.

ROUND 1 RESULTS: Mean Response 3.14

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	4	2	6	1	3

ROUND 1 COMMENTS:

"See #20 above." [Above Repeated: "B.S. no room for this attitude in war. You make it work. Everybody did."]

"Increased my tasks, but not by regulation."

"What regulation?"

"Had to keep track of cargo/pallet positions/etc...but that's normal."

"Not my position. However, the command was required to add manpower to manage DE."

"There was no regulation."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

23. Desert Express procedures should be documented and formalized by each participating organization without centralized directives or regulation.

ROUND 1 RESULTS: Mean Response 3.82

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	2	3	4	7	0

ROUND 1 COMMENTS:

"This is a DOD airlift system."

"NO. See previous answers on this subject." [No specific comments referenced.]

"Your in a dream world if you think TRANSCOM/MAC will decentralize their SOP's."

"Put it together, under the authority of TRANSCOM!"

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Your Comments:

24. Desert Express policies and procedures were clearly identified.

ROUND 1 RESULTS: Mean Response 2.65

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
3	5	5	3	1	0

ROUND 1 COMMENTS:

"... thought they were great."

"Policies and procedures evolved."

"Eventually. Remember, it was a first time effort and had to be developed, then fine tuned."

"Great deal of message traffic took place, with a chance for all to agree/disagree prior to start-up. After a few runs, we were asked for inputs on changes/fine-tuning."

"They were neither identified nor understood."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

25. There should be a single joint agency tracking all express channel requisitions and movements.

ROUND 1 RESULTS: Mean Response 2.88

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
2	5	5	3	2	0

ROUND 1 COMMENTS:

"GTN should give the services the tracking capability."

"Good idea--think GTN will have that capability in future so all shippers can check."

"Who? When? How?"

"I don't think so. Each component of the CINC should be set up to do the leg work, and upbrief as necessary."

"More bureaucracy - services already geared to track."

"Again, TRANSCOM!"

"How about ITV in TRANSCOMs GTN system."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

26. All 999/TP1 requests should be routed through a single supported command agency for verification prior to transmission to CONUS based supporting logistics commands.

ROUND 1 RESULTS: Mean Response 2.53

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
3	7	3	3	1	0

ROUND 1 COMMENTS:

"Great idea/concept but I think the whole system would grind to a halt at the supported CINC end."

"These are MICAPS! Don't slow the process down."

"Might be for each service (component) as they're responsible for maintaining their force."

"Feel that each service should have their own clearance authority."

Your New Answer: (Circle Number)

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

27. Addition of a second mission (plane) to clear Desert Express backlogs resulted from abuse of the 9AU high priority supply requisition and transportation system.

ROUND 1 RESULTS: Mean Response 2.88

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
4	5	1	3	4	0

ROUND 1 COMMENTS:

"To some extent."

"Absolutely early on!! Toward the end, we needed the added capability."

"Generally speaking, I believe 9AU had integrity."

"DE overall was result of abuses and growing backlogs."

"We needed the extra plane to bring mission essential items during the conflict."

"The demand for "war stopper" movement grew due to the actual combat."

"NO! NO! it was increased failure rates in aircraft, missile, armor, helo's, and ship weapon systems as tempo of ops increased."

Your New Answer: (Circle Number)

Strongly Agree Agree Neither Agree or Disagree Disagree Strongly Disagree Does Not Apply

<-1----------2---------3----------4----------5---------6->

Comments:

Please circle your response(s), or provide a written answer in the space provided for the following two multiple choice questions.

28. Which organization should direct the commencement of an express airlift channel:

(a) Supported CINC
(b) USTRANSCOM
(c) Military Airlift Command
(d) Joint Chiefs of Staff
(e) other

COMMENTS:

ROUND 1 ANSWER DISTRIBUTIONS:

(a) Supported CINC - 7
(b) USTRANSCOM - 7
(c) Military Airlift Command - 0
(d) Joint Chiefs of Staff - 2
(e) other - Services

29. Express airlift procedures should be outlined in:

(a) DOD Directives
(b) JCS Publications
(c) USTRANSCOM Regulation
(d) OPLANS only
(e) MAC Regulation
(f) other

COMMENTS:

ROUND 1 ANSWER DISTRIBUTIONS:

(a) DOD Directives - 5
(b) JCS Publications - 7
(c) USTRANSCOM Regulation - 6
(d) OPLANS only - 5
(e) MAC Regulation - 3
(f) other - DTMR
(2) Service Trans/Supply Regs

AGAIN, THANK YOU FOR PARTICIPATING IN THIS SURVEY.

Appendix E: Round Two Delphi Survey Comments

1. Desert Express was created to bypass air cargo backlogs at existing APOEs (Dover & Tinker).

ROUND 2 RESULTS: Mean Response 3.20

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	4	3	5	2	0

ROUND 2 COMMENTS:

"Again, there would not have been a backlog if the services adhered to the priority system."

"Bypassing the backlogs is only a partial reason. The existence of the backlogs was symptomatic of how "999" did not ensure expediting delivery; therefore, a DE system was created to provide express delivery for war stoppers."

"No matter how its described DE was expedited service through a system not just backlog avoidance."

"The system was not created to "bypass" - it was there to move the mission essential cargo. Service's abuse of airlift system and priority created the massive backlogs. Airlift is only meant to move the essential cargo (i.e. 5-10% of total)."

"Much more appropriate comments from round 1. The lead time for normal channel was considered too long. DE concept anticipated to reduce significantly and it did."

"Created to serve two equal purposes
- Provide quick turn time from POE reception to POD off-load
- Avoid cyclical backlog."

"Agree with the round one comment stating "bypass" as misleading. DE was created to move "war stopper" cargo."

"Priority abuse was the main driver for DE. While the concept was developing before backlogs became a problem, the root cause has been our collective inability to police ourselves. With discipline, the need for a special airlift network would have not materialized."

"DE was created to move the 999/MICAP items which were needed immediately. The MAC channel pipeline could not identify these "red hots" and move them overnight. The backlogs at Dover contributed to setting up DE."

"I don't think the primary reason was to by-pass backlogs, but the backlogs were probably a secondary reason."

2. Desert Express was necessary to overcome abuses of the supply requisition and transportation priority systems (MILSTAMP & MILSTRIP).

ROUND 2 RESULTS: Mean Response 2.80

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	8	1	3	2	0

ROUND 2 COMMENTS:

"Three responses from round one apply: 1) "The DE allocation forced the services to sort out their real priority"; 2) "The reasons...(a) supply discipline almost non-existent as 80% of all cargo MICAP/999/PRI 1 etc...(b) In-transit visibility unsatisfactory"; 3) "When all cargo carries the same priority, there is then no priority."

"Abuse of the priority system led to the majority of strat APOE cargo arriving as "999." Therefore, an express system was needed to accomodate the true express cargo. We could not determine what percent "999" was a result of abuse. Concur that even without abuse, would still need a DE to move the "super 999"."

"To a degree abuses of the priority system caused the backlog at Dover - but I believe you still would have needed a DE to rush high-priority parts."

"DEX and the supply requisition/trans priority are not in the same league. DEX was there to move mission essential cargo. The abuses to supply requisition and trans priority are the fault of the Service's and MATCU's."

"Needed to overcome standard pipeline time. Deployed units receive 999 priority as stipulated by MILSTAMP users. Many DE shipments were abuse of 999."

"Abuse is in the mind of respondent. Not a good question! The system is vague and the answers reflect it."

"Yes, there were abuses in the supply & transportation priority systems, however I really don't feel that DE was necessary to overcome this; only necessary to move "show stopper" type cargo."

"The reasons...(1) supply discipline almost non-existent as 80% of all cargo MICAP/999/PRI 1 etc...(2) In-transit visibility unsatisfactory."

"Remember, FAD's are urgency of need went up for some when the forces deployed. This action automatically upped the transportation priority. While some units may have abused the priority system for some requisitions, the system - UMMIPS, must take some blame. DE was needed to move the truly "must go" MICAPS."

"The magnitude of cargo coming as "999" asked for the creation of an express system. It would be interesting to see if the system could move priority cargo without DE (given there was no abuse of the priority system)."

3. Desert Express was necessary due to Operation Desert Shield rapid deployment requirements.

ROUND 2 RESULTS: Mean Response 4.27

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	1	0	8	6	0

ROUND 2 COMMENTS:

"We looked at DE as supporting the sustainment of the forces not deployment."

"Sustainment, not deployment."

(Repeated from Round 1 comments) "It was really necessary to maintain the weapons systems. You can't fight if you can't fly. DE gave the ability to provide "next day service" for NMCS, half-way around the world. In commission rates were better than peacetime after DE began."

"Sustainment is the key operative here."

"DEX began in November. It was there to sustain the force with "mission essential" items. t was imperative that these items needed for combat be moved quickly."

"Sustainment accurate. Deployment not factor of DE." (Referencing Round 1 comment, "We looked at DE as supporting the sustainment of forces not deployment.")

"We are resourced and trained to operate in a JIT system. High $, short shelf life items will always require fastest transport. If air were not available - the fastest ship would be used."

"DE supported sustainment not deployment!"

"In some respects yes. DE started in October 90. Phase II deployment and ongoing sustainment requirements overlooked available airlift capability. However, a reasonable approach to priority discipline by the services would have gone along way to invalidating a DE need."

"DE was used for sustainment, not deployment."

4. I was fully aware that Joint Chiefs of Staff Project Code 9BU was created to identify all Operation Desert Shield bound cargo.

NO RESPONSE REQUIRED
ROUND 1 CONSENSUS: 73% HIGHLY AGREE.

5. I was fully aware that Joint Chiefs of Staff Project Code 9AU was created to further segregate the highest of high priority cargo (999/TP1/MICAP/NMC).

ROUND 2 RESULTS: Mean Response 1.67

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
9	4	1	0	1	0

ROUND 2 COMMENTS:

"This was used to further separate cargo priorities. It should be noted that we "created" another category because the system could not handle the volume. We need to fix the system - not create side bars!"

"9AU created for DLA. Later it became a way to separate DE cargo bled off to Tinker, Dover, and Norfolk."

"It provided visibility and validated criteria."

"Thesis research revealed this fact. There was substantial message traffic on this."

"It was the super, super designator that was controlled by space allocation on single airlift."

"9AU was created by JCS to move the 999/MICAP shipments that were "drop dead" items, thus assisting the shipper and ACA in scheduling it for DE."

6. To preclude re-inventing the wheel for each contingency, "express" procedures must be formalized into directives and/or regulations.

NO RESPONSE REQUIRED
ROUND 1 CONSENSUS: 73% HIGHLY AGREE.

"Unfortunately - we are bilked into treating a symptom vice the cause!"

7. Express airlift regulations/directives are not required. Geographic CINCs must state the requirement, if needed, in their operations plans.

ROUND 2 RESULTS: Mean Response 3.60

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	3	1	6	4	0

ROUND 2 COMMENTS:

"Express not needed if adherence to existing priority system followed."

"Need to apply our lessons learned to preclude the disruptions incumbent with having to create another DE completely from scratch. Would be useful to identify DE requirements in OPLANS if possible, but quantifying such notional resupply requirements would require a leap forward from present capabilities."

"CINCs will state requirement, but this will be dynamic. The plans can state a theater CINCs requirements, but these can only be used as a baseline -- there will be many changes."

"There is "hot" and there is "red hot". DE like airlift will be required to sustain high in-commission rates. General guidance on how the system is to work when implemented by the CINC should be in appropriate service regulations, as well as the OPLANs."

"Procedures should be in existing publications."

"It must be formalized into existing regs/directives. Theater CINC's are still responsible for developing their own support and sustainment plans. We, transporters, must provide the system to move the cargo."

"Pull system needed. Too much "push" from stateside." (Referencing Round 1 comment "B.S.--Ten years from now we will have to "re-invent the wheel" if we don't get it on paper.") "Totally bogus thought. Airhead comment." (Referencing Round 1 comment "Express not needed if adherence to existing priority system followed.") "Formal concept expression must be made. Skeletal form to suggest what and how. Par and tailoring environment leads to "short" determination of "true asset requirements". Planning is good forward thinking not the stuff engraved in granite."

"DE operation was <u>very</u> expensive in terms of resources used (more crews, porters, backup aircraft, etc.). CINC must decide in his OPLAN if he wants to commit apportioned resources to a DE type operation. The current regs can support a DE operation, but at great expense. Very personnel intensive."

"CINC's must state the requirements in three OPLANs. Why publish a regulation/directive that will only be pulled off the shelf during contingencies."

"Express not needed if adherence to existing priority system followed."

8. A separate express airlift channel mission is desired during contingencies due to unpredicted airlift requirements.

ROUND 2 RESULTS: Mean Response 2.67

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	8	5	1	1	0

ROUND 2 COMMENTS:

"Depends on the size of the contingency."

"DE assisted in keeping aircraft in-commission rates extremely high. It's value was proven. It must be available to the CINC to have only the "red hot - drop dead" items. Other high priority items may move on channel lift."

"The concept must be in regs/directives with ability to implement as required. It will depend on the size of the operation/contingency and where it is (i.e. Saudi vs Grenada?). Still need to concentrate on the front end to eliminate the abuses of the system."

"Provided there will be enough air frames to handle the overall demand and allow dedication of air frames to express movement."

"True." (Referencing Round 1 comment "The requirement depends on the size of the contingency. There may be no need if the operation is small", or short in duration.) "To shorten pipeline time of critical parts."

"Too hypothetical. CINC must decide to commit his apportioned lift if he wants it."

"Maybe different for different contingencies (small/large?). Again DE was established for "show stopper" cargo - not based on overall airlift requirements."

"The requirement depends on the size of the contingency. There may be no need if the operation is small."

9. Had the Gulf War continued, Desert Express would have become unnecessary.

ROUND 2 RESULTS: Mean Response 4.47

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	1	0	5	9	0

ROUND 2 COMMENTS:

"Viet Nam experience proved the opposite."

"If anything it may have had to be expanded."

"Would have continued to be an essential method of delivery for "mission essential" items.
- If the war continued, with continued fighting, not just "force in place" concept, the 2 flights a day would have continued and perhaps increased to 3. I do not see the need decreasing or the AOR commanders working the slower delivery of normal channel flights. Also big problem with cargo delivery from channel flights from APOD to final destination."

"From a purely business stand point, if the customer required high priority parts, he would pay premium transportation. From a contingency scenario, while the customer may not directly "pay" for premium transportation, there will still be a demand for it."

"The fastest means will always be asked for. Again, the CINC's staff must decide the balance of efficiency vs effectiveness. A CINC may request the Concord if it was available."

"Still needed but with a name change."

"Reason: Completion of deployment meant more airlift allocations to sustainment. It maybe hard to believe, we may have actually slowed "critical" item movement by using CHS once every 24 hours when Dover was averaging flights every three hours."

10. Joint Operations Planning System unit sustainment procedures must be integrated into MILSTAMP.

ROUND 2 RESULTS: Mean Response 2.67

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
2	7	1	4	1	0

ROUND 2 COMMENTS:

"JOPES is the umbrella for deliberate planning (JOPS) and execution (JDS). Perhaps it's all JOPES now. Deliberate planning produces notional requirements only. There are no published execution procedures. Desert Storm TPFDDS had no (almost none) resupply, i.e., sustainment. This is an old problem - reconciling/interfacing the 2 systems. There really are no execution procedures to put into MILSTAMP, but any way to make the 2 systems compatible will help."

"YES. Some actions have already been included, but much more work is needed in this area. It's a time consuming process to integrate."

"MILSTAMP integration of unit deployment cargo would give better visibility of what has been moved, through what route and can use existing systems and CMOS to analyze and enter data."

"The requirement is the reverse. Put peacetime procedures into wartime practice. Put MILSTAMP into JOPES as the execution system."

"Yes - and will give us improved visibility."

"This is already being worked." (Referencing round one comment "MILSTAMP must be integrated into JOPES. Channel requirements are currently being added to the deliberate planning process. Data input upon execution will be via GTN".)

11. Express airlift cargo identification and clearance requirements must be integrated into MILSTAMP.

- ***NO RESPONSE REQUIRED***
ROUND 1 CONSENSUS: 60% AGREE

12. LOGAIR should have expanded service to include "Desert Express" operations making a separate system unnecessary.

ROUND 2 RESULTS: Mean Response 4.60

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	0	0	6	9	0

ROUND 2 COMMENTS:

"LOGAIR limited to CONUS only."

"LOGAIR and DE were cousins, not comrades. DE like operations should generally remain linked to commercial express carriers."

"LOGAIR is not long for this world. It is a CONUS system that is very expensive but not totally responsive to the needs of the customer. It was not a player in DEX and, frankly, would be hard to include in future DEX's."

"Currently, it looks like LOGAIR will cease after this fiscal year."

"LOGAIR used many reroutes and extra sessions during the deployment stages to meet the needs of its customers. Since then the next day service has been great! BUT!! It does not appear that LOGAIR will be available to use. DE used staged crews, back up aircraft and dedicated freight crews. I don't think commercial renters could have guaranteed such support."

"Concern with above, LOGAIR did expand but not to the extent suggested in question."

"LOGAIR is stateside only."

"LOGAIR very limited - changes/expansion of system to all shippers impractical."

"See my check mark referencing round one comment "LOGAIR is a domestic system that has outlived its usefulness--shipments for DE were routed to Charleston using commercial express service to insure they arrived on time."

13. When activated, Civilian Reserve Air Fleet planes should be used for express channels to free military assets.

ROUND 2 RESULTS: Mean Response 4.00

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	1	2	8	4	0

ROUND 2 COMMENTS:

"CRAF should be maintained as an option contingent upon supporting equipment/APOD accommodations, whether hostile environment, other factors, etc. Can't say they should be used."

"Military air should be primary, but I agree with paragraphs 1, 2, 3 & 5." (1, 2, 3 & 5 reference round one comments: 1) "Control, control, control. Organic gives us total flexibility ie hot spares, backup crews etc. DE was MACs #1 priority MSN"; 2) "Depends on APODs"; 3) "CRAF could be assigned, but military air appears suited. More flexible, easier to rapidly load/unload, can land anywhere in theater and be off-loaded. Depending on the type CRAF aircraft, special handling equipment may be required"; and 5) "In all likelihood, will need the DE planes to go into the "HOT" airstrips. Too much trouble to get commercials into these areas and to have the MHE to support.")

"Up to execution requirements."

"My feelings echo what has been said above. (Referencing all round one comments for this question). Military airlift provides the flexibility to get show stoppers where they need to go."

"For all the reasons stated in Round 1 and - the realization that DEX will move locations within the AOR (i.e. - moving closer to support the forward movement of forces such as KKMC) and civilian aircraft can not/will not be available to go into these hot spots. Finally, the MHE needed to support CRAF vs military air becomes too hard to support."

"Too many operating restrictions for civil aircraft. Military aircraft are suited for it!"

"Not necessary! Will be dictated by the circumstances of the war, runway capabilities, MHE equipment available etc. - lots of factors that are different at different locations."

"The use of CRAF is but one of several options. Don't restrict AMC/TRANSCOM to choice of frames."

"Only one of many alternatives."

14. Air cargo backlogs are inevitable during contingency operations.

NO RESPONSE REQUIRED
ROUND 1 CONSENSUS: 60% AGREE

15. Service air clearance authorities knew what the supported command's air shipment priorities were.

ROUND 2 RESULTS: Mean Response 3.80

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	2	3	6	4	0

ROUND 2 COMMENTS:

"The ACA's did not know the CINC's priorities. The supported CINC is in the best position to make that determination."

"The air clearance authorities supported the air shipment priorities they were provided, is a more accurate/precise statement."

"They knew only those requirements which were identified in the SITREPS, and only then if they had access to the information."

"They changed hourly! The CINC's loggies adjusted needs as directed."

"My research indicates this was not the case. Communication is the key element."

"Wrong! With 999 abuse and no visibility it would not have changed." (Referencing Round 1 comment "If they did it would have precluded CENTCOM reps to be at the APOEs diverting cargo to surface.")

"The ACA's need to be centrally located during contingency's at TRANSCOM for better inputs. SITREPS do not talk ACA language - better interface needed. Peacetime mission for ACA dying. Purple suit and relocate for wartime role. Interface with aerial ports for better information on part limits, cargo on hand and channel saturation."

"They knew but--
- many shippers didn't pre-clear cargo
- No procedures to clear cargo, it's been done by machine default for years."

"Possibly one of the problems was a disconnect between CINC needs and service desires. For example - AF tried to limit @ 400 lbs, ARMY, 10k lbs, Navy - nonexistent...."

16. Stricter rules are required for challenging high priority shipments.

ROUND 2 RESULTS: Mean Response 3.27

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	4	4	6	1	0

ROUND 2 COMMENTS:

"Need a means to discriminate among high priority airlift eligible cargo according to CINC's priorities. This means must also detect priority abuse. This is not available on this planet at this time, and certainly challenge criteria won't do the job."

"Stricter rules maybe, stricter control on who is allowed to make exceptions to the rules, definitely."

"The challenge needs to be in the Supply system to screen out the abuses to the requisition process. The transportation air challenge permits the agency challenged a response time of 7 days. The multitude of air challenge message traffic could bog down the system."

"The ACA's/MATCU's must have the knowledge/training to be effective. If necessary they must have the grade to enforce the priorities."

"In peacetime DBOF will decide this. (DBOF is Defense Operating Fund). In wartime some kind of check and balance is needed."

"WRONG! No challenge AF program in place!" (Referencing Round 1 comment "Challenge system seemed to work well, just overwhelmed.")
"WRONG!" (Referencing Round 1 comment "Enforcement by services and ACAs all that is needed.")
"BOGUS!" (Referencing Round 1 comment "YES, must have decision rules.")

"1. AF did not challenge 9BU/9AU cargo.
2. Interface w/ CENTAF REARS MICAP only source for validating "true" requirements.
3. Without feedback from AOR we cannot second guess what they need.
4. Message traffic to AOR minimized. Could not get challenge to the requisitioner. Shipper did not know urgency.
5. Normal AF challenge rules too restrictive."

"Rules are available -- no authority or means to enforce them. The mode operator should not police."

"Rules are there - just follow them."

"We don't need more rules to enforce rules."

17. Service air clearance agencies require the authority to divert high priority cargo away from express channels.

ROUND 2 RESULTS: Mean Response 2.40

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
7	1	1	6	0	0

ROUND 2 COMMENTS:

"Under the DE "positive clearance" procedures, the ACA must have the authority to divert for the clearance process to work. Else, cargo would free flow into DE and it would cease to be express."

"If the criteria is well defined, that authority is inherent."

"Diversion is a CINC decision. I agree with paragraph 2, above." (Paragraph 2 above, references the round one comment "This really depends on what you mean. If "express channels" mean airlift then NO; only the CINC (or reps) should make that decision. If you mean "DE" like, then the

ACA wouldn't divert, they may however, not clear due to size, compatibility, etc. Or set-up for another flight.)

"CINCs JTB should be the major player in this."

"The CINC must be the one to determine his priorities, which will change. The transportation system must respond to these needs. The ACA's should only have authority within the boundaries as determined by the CINC's guidance."

"1. ACA's with good UJC visibility could have closely monitored and cleared only eligible cargo. KEY FACTOR: VISIBILITY.
2. Without good definition of what DE cargo should be UJC, commodity codes, nomenclature, something as guidance the ACA's can not effectively control."

"They already have the authority they need. They need the means to do it. Pure and simple -- uncleared cargo doesn't move; service cargo reps must be on-site to divert or fix frustrated cargo. Not a mode operator's job!!!"

"Unified command's responsibility not individual services."

"Discipline! Discipline! Discipline!"

18. Joint air cargo clearance teams consisting of members from the transportation component command, supporting commands, and supported command are required at each APOE for command, control and diversion actions.

ROUND 2 RESULTS: Mean Response 2.20

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
4	7	1	3	0	0

ROUND 2 COMMENTS:

"Agree in part. The supported CINC must do the prioritization and clearance."

"Yes, but must have communication with the theater."

"It may not take a large team, however there is need for a mix of transporter and customer representatives at each APOE."

"Should not be needed if ground rules are firmly established and the ACA reps are familiar with the CINC's needs."

"Not if the ACA knows what the CINC's priorities are and acts accordingly."

"Yes, they need to represent "Unified CINC" and serve as a "bell button" to ensure his priorities are met."

"Only if discipline not maintained or so long as discipline is not exercised."

19. TRANSCOM requires the authority to divert cargo.

ROUND 2 RESULTS: Mean Response 4.53

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	1	1	2	11	0

ROUND 2 COMMENTS:

"Not their job. They are the operator."

"No. The CINC is the "diverter", not the lift operator."

"TRANSCOM must service the customers needs, not determine what they are!"

"BINGO!" (Referencing Round 1 comment "The CINC is the one who knows what he needs and when he needs it, not TRANSCOM.")

"I am against any stateside activity "pushing" cargo. Shippers do not know priority or urgency. AOR has to make input. Relocate ACA and give AOR support. All that is needed!"

"As an operator, TRANSCOM should move cargo on whatever mode meets the customers needs. I might also note that the customer should have realistic deadlines for cargo needs."

"They already have it, but must answer to CINC if not done right. TRANSCOM is not a mode operator; they are the mode manager."

"RIGHT!" (Referencing round one comment "The CINC is the one who knows what he needs and when he needs it, not TRANSCOM.")

"See check marks in reference to round one comments." (Referencing round one comments: "TRANSCOM is a mode operator--the shipper diverts cargo at the request of the CINC."; "They're the operator, not the shipper. Someone else has to keep them honest in peace and wartime."; "Not their job.")

"Shipper IAW CINC priorities diverts - not the moving agency."

20. My organization's manning was inadequate to handle the additional workload required by Desert Express.

ROUND 2 RESULTS: Mean Response 3.85

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	0	3	5	4	2

ROUND 2 COMMENTS:

"DE is just another mode of shipment - no additional requirements."

"Expanded hours, harder working, wartime attitude can help "add" manning. Everyone is faced with a manning problem in wartime."

"Manning will always be inadequate for surge operations. Effective leaders will find ways to make things happen. ARC augmentation is a major resource."

"I was not allowed to augment. Service would have been better with augmentation. DE only job performed for months!"

"Manpower expanded to meet requirement. Reserves were used extensively."

"Just one of many, but 20 hour days was the norm."

"Initially, but war is not business as usual. We quickly augmented our office."

21. My unit adhered to regulatory standard operating procedures throughout Desert Express's life cycle (plan, create, operate).

ROUND 2 RESULTS: Mean Response 3.31

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	2	4	4	2	2

ROUND 2 COMMENTS:

"Generally, but innovation helped."

"However, the concept was written in September/October; refined and then implemented - with constant revisions as needed to fit the situation."

"DE changed for us at least 5 times a day. We had to define procedures for AF. Do whatever needed to be done."

"By regulation, project codes cannot be used for specialized handling, 9AU violated the "standard" regs. However, rules were changed to make DE work."

22. Desert Express increased the number of tasks required of my position by regulation.

ROUND 2 RESULTS: Mean Response 3.33

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	1	6	5	0	3

ROUND 2 COMMENTS:

"What regulation?"

"Tasks increased, but its a stretch to say they were regulatory."

"You do what is needed at the time. If it increases workload, fine - but that is the way it goes."

"Again, what regulation?"

"The number of tasks did not change. The DE concept had to be performed manually by the AF ACA and that caused significant problems. We need real time interface with the ports and shippers to provide effective support."

"CAT not governed by regulation. Too ambiguous, e.g.
- Did new regulations increase tasks?
- or did new tasks exceed current regs?
What's the question?"

23. Desert Express procedures should be documented and formalized by each participating organization without centralized directives or regulation.

ROUND 2 RESULTS: Mean Response 4.47

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	0	1	6	8	0

ROUND 2 COMMENTS:

"One centralized directive blessed by JCS so everybody plays by the same rules."

"Generalize to assume folks know it will happen and allow preparation for it, but keep away from the nitty-gritty. MUST be in OPLANS. Also, we need a name for it - Warrior Express?"

"Put under TRANSCOM (since AMC is an element of TRANSCOM)."

"DOD or TRANSCOM needs something to plan for the future use of DE concept. Each service needs to work their portion. We found we could do it, now lets work to do it better next time. Without formalizing the concept and working with our deficiencies realized in DE we will start at the same place and suffer the same problems."

"TRANSCOM should direct implementation as circumstances require and CINC requests."

"Due to the limited amount of airlift assets - it has to be centralized to better utilize what's available."

"DE - if formalized - should be via one sheet of music with OPLAN I.D. used as the trigger for implementation."

"TRANSCOM/AMC should formulate the rules."

24. Desert Express policies and procedures were clearly identified.

ROUND 2 RESULTS: Mean Response 2.27

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
1	10	3	1	0	0

ROUND 2 COMMENTS:

"Eventually."

"They were clearly identified after an evolutionary period. Says it all!" (Referencing Round 1 comment "Great deal of message traffic took place, with a chance for all to agree/disagree prior to start-up. After a few runs, we were asked for inputs on changes/fine-tuning.")

"The operations portion might have been great! Logistically everything had to be developed. Problems with determining what 9AU cargo was and then the opened criteria for 9AU made DE clearance an evolving process. By the end of DE we were comfortable with the process but getting there was rough. The lack of interface with the ports/shippers and our manual mode impeded our goals. The AF ACA made procedures for DE clearance and shippers went with what we mandated. Air Staff applies same factors that could not be used in the MILSTAMP arena which negated the action. We need to work this issue!"

"Clearly identified; not clearly broadcast by components; not adhered to on purpose by some units."

"They couldn't have been clearer! However, like other systems people sometimes try to find loop holes to meet their requirements."

"Early on - no. As it matured - yes. As with any new and evolving system - there's always a learning curve."

25. There should be a single joint agency tracking all express channel requisitions and movements.

ROUND 2 RESULTS: Mean Response 2.73

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
2	6	2	4	1	0

ROUND 2 COMMENTS:

"If you have confidence in the transportation system -- you don't need to track. GTN should give the customer access if required in certain super high priority shipments -- status and location."

"Why? The Services supporting their CINC element should do the tracking. Keep the extra layers out of it. If TRANSCOM needs information they can get it from the Service ACA's or from GTN."

"TRANSCOM is the agency - GTN and CMOS are the vehicles."

"Again, TRANSCOM! Purple suit ACA for contingency at TRANSCOM. Get visibility to requisition. Only way to get good cargo discriminators. Services be damned in war - its a united effort and needs to be pulled together. Peacetime role of ACA will be negated by the budget and DMRD 971. Concept is controlling - not just tracking. Without good information control isn't possible without lengthy delay."

"Adopt what commercial industry uses for in-transit shipment visibility."

"No need to track everything; Only police/control bad actions/locations."

"YES, Right Answer." (Referencing round one comment "GTN should give the services the tracking capability.)

"More bureaucracy - services already geared to track."

26. All 999/TP1 requests should be routed through a single supported command agency for verification prior to transmission to CONUS based supporting logistics commands.

ROUND 2 RESULTS: Mean Response 3.27

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	6	0	8	1	0

ROUND 2 COMMENTS:

"CINC should have a clearing house so components don't order the same material -- which could happen with consumable type item."

"Abuse must be stopped, but think this would slow process to much."

"999/MICAP but not "TP1" or equipment, and then only for a local abuse check, even after the fact. Don't slow down the MICAP process."

"Good in theory, but how long would that take. Is time a luxury we can afford during a war?"

"CSSA seemed to help in sorting requests from the Desert Storm AOR."

"Let the system work. Use the ACA's/MATCU's to challenge the priorities. Ensure that all service's put out clear, concise guidance."

"It would slow things down. If ACA's had visibility of all requisitions they could know if it was valid based upon SBSS and MILSTRIP data. A deployed unit's UJC and FAD are so high they don't have to abuse the system to get a 999. The AF ACA does have the visibility of requisitioned items through AFLIF."

"The alternative is for CINC to specify what constitutes 999. The CINC has theater logistics authority."

"The USCENTAF/CC gave us his priorities on a daily basis! As USCENTAF/Rear it was our responsibility to ensure his priorities were met."

"Might be for each service (component) as they're responsible for maintaining their force."

27. Addition of a second mission (plane) to clear Desert Express backlogs resulted from abuse of the 9AU high priority supply requisition and transportation system.

ROUND 2 RESULTS: Mean Response 3.87

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Does Not Apply
0	3	2	4	6	0

ROUND 2 COMMENTS:

"Additional demand for "shoe stopper" items required the extra mission."

"Not from requisition abuse but from the recognition that "drop dead" items needed to be separated from "normal" high priority shipments. As the air war expanded so did the number of weapon system MICAPs. This is what created the need for the additional airlift."

"The plane was needed to move the "mission essential" items as more were needed once DESERT STORM began."

"Second missions were needed before firing began. Everyone state side was trying to push out those requisitions and folks in the AOR were trying to get everything they thought they would need. NATURAL REACTION!"

"To some extent."

"Not abused by requestor -- they had NO quota!!
Abused by clearance authorities -- they didn't know how to do their jobs (As TCC's expected)."

"Right Answer!" (Referencing round one comment "NO! NO! it was increased failure rates in aircraft, missile, armor, helo's, and ship weapon systems as tempo of ops increased.)

"To some extent. Not all services followed established 9AU procedures."

28. Which organization should direct the commencement of an express airlift channel:

(a) Supported CINC	-	8
(b) USTRANSCOM	-	7
(c) Military Airlift Command	-	0
(d) Joint Chiefs of Staff	-	1
(e) other	-	0

COMMENTS:

"Supported CINC must call the shot with input from TRANSCOM."

"CINC should decide how his apportioned airlift is used."

"Supported CINC requests. TRANSCOM directs."

"Supported CINC knows his needs best. He says he wants it then TRANSCOM gives it to him."

"The operator should, based on customer need."

"Supported CINC would prioritize his missions, sustainment, deployment, express."

"TRANSCOM is responsible for providing transportation support to the CINC's."

"Supported CINC requests, USTRANSCOM implements."

"The supported CINC knows what he needs and sets the priority."

"Supported CINC - without question!"

29. Express airlift procedures should be outlined in:

(a) DOD Directives	-	1
(b) JCS Publications	-	9
(c) USTRANSCOM Regulation	-	2
(d) OPLANS only	-	8
(e) MAC Regulation	-	1
(f) other	-	DTMR, Service Regulations (2) Supply Regulations

COMMENTS:

"Under CINCs logistic authority. TRANSCOM plans should support. JCS approves plan."

"OPLANS, TRANSCOM regs, and Service regulations."

"OPLAN specific e.g.; Routings APOE, APOD locations. Let the war fighters tailor the procedures to match their respective theaters."

"JCS Pubs - if formalized. OPLANS used as trigger."

"(a) DOD Directives - concept
(b) JCS Publications - Concept and OPS concept
(c) USTRANSCOM Regulation - procedures for determining requirements and service participation, allocation, etc.
(d) OPLANS
(e) MAC Regulation - implementation procedures
(f) other - service ACA regulations, service clearance procedures."

"TRANSCOM regs (and the OPLANS for a theater should make a reference to the DEX program) since TRANSCOM will be responsible for providing transportation support."

"My opinion is this should be in JCS publications, detailing possible implementation in OPLANS---."

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Vita

Captain Terry D. Basham was born 10 March 1959 in Valdosta, Georgia. He graduated from Trevor G. Brown High School in Phoenix, Arizona in 1977. He graduated from Northern Arizona University in 1983 with a Bachelor of Science Degree in Business Administration. Captain Basham was commissioned through the Army Reserve Officer Training Corps Early Commissioning Program in 1981 and served 2 years in the Army Reserve while completing degree requirements. He entered Active Duty in January 1984. After attending the Transportation Officers Basic Course at Fort Eustis, Virginia, he was assigned to the Military Traffic Management Command's Bremerhaven Terminal in the Federal Republic of Germany as the Port Operations Officer. In 1987, he completed the Transportation Corps Officer Advanced Course and was assigned to the 10th Mountain Division (Light Infantry), Fort Drum, New York. There he served as Commander, D Company (TMT), 10th Supply and Transport Battalion, the 10th Division's only Truck Company. Captain Basham was then assigned as the Division Support Command Movement Control Officer, and later as the Battalion Operations/Intelligence Officer (S2/3), 110th Forward Support Battalion. Captain Basham received his Regular Army Commission in April 1990.

Permanent Address: 6302 W. Catalina Dr.

Phoenix, Arizona 85033

Vita

Captain Jason G. Evgenides was born on 17 April 1960 in Waco, Texas. He graduated from Kubasaki High School in Okinawa, Japan in 1978. He attended the University of Puget Sound (Tacoma, Washington), graduating in 1984 with a Bachelor of Science degree in Information Systems.

Upon graduation, he worked for Electronic Data Systems (EDS) in Saginaw, Michigan. In 1986 he attended Officer Training School (OTS) at Lackland AFB, Texas. Upon completion of OTS he was assigned to the 2nd Mobile Aerial Port (2MAPS) at Little Rock AFB, Arkansas. He served as Officer in Charge (OIC) of Vehicle Operations and later as OIC of the Air Terminal Operations Center. In 1986, he was assigned as Commander, Detachment 3, 7300 Materiel Squadron, Bremerhaven, Germany serving as the Water Port Liaison Officer (WPLO) for USAFE. He also served as a WPLO in Ad Damman, Saudi Arabia during Desert Shield/Desert Storm. In 1991, Captain Evgenides entered the Air Force Institute of Technology, School of Systems and Logistics, as a graduate student in Logistics Management.

Permanent Address: 1015 N. Smiley Dr.
O'Fallon, IL 62269

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13. ABSTRACT (Maximum 200 words)

This study was sponsored by the Military Airlift Command to examine the Desert Express airlift channel used during Operation Desert Shield/Desert Storm. The goal was to determine what changes or improvements should be made prior to formalizing Desert Express procedures into Department of Defense doctrine. The research method used was a Literature Review supported by an application of the Delphi Technique. The Literature Review reviewed past military express operations and current regulatory procedures to raise key issues. These issues were then presented to 19 airlift experts in two separate rounds of written questionnaires. The research revealed that Desert Express was the latest example of a repeating trend in which a similar problem was solved using similar procedures used in past contingencies. The problem was aerial port backlogs caused by a shortfall of airlift assets, a lack of a pre-existing plan, and a lack of movement control. Solutions were express airlifts and tighter movement control. The research found that while successful, Desert Express suffered from operational control problems. Suggested improvements included the establishment of a stronger Supported Command Joint Transportation Board (JTB) and clearer lines of responsibilities between key participants.

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